Critical Success Factors, Mechanisms, and Information Technology Project Success: A Case Study of a Data Migration Project in a large South African Organisation.

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by

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Abstract

Background: There are numerous studies in the Information Technology (IT) field on IT project success and/or failure and reasons thereof. There is much discussion about what constitutes IT project success and the main determinants are generally a subjective matter. Several studies address critical success factors and some address success criteria about IT projects. However, the combination of mechanisms, success criteria, and critical success factors has not been adequately researched or widely addressed and hence the need to conduct this study which seeks to examine the aforementioned relationships and propose a modified model to explain the links among them.

Objectives: The main objectives of this study are: 1) To identify and discuss the role played by success factors (input variables) in an IT project; 2) To identify and discuss the role played by success criteria (output variables) in an IT project; 3) To identify and discuss the role played by mechanisms (mediating variables) and impact thereof on an IT project; and 4) To identify, investigate and explore the interrelationships between the aforementioned constructs and how they impact the success of an IT project.

Research Methodology/Approach: A modified model of the Black Box of IS Project Success Mechanisms was utilised to guide the data collection process. The model was based on three fundamental constructs developed from various sources of literature viz. success criteria, critical success factors, and mechanisms. The study made use of a single case study based on a data migration project which one of the major corporates in South Africa executed. The data migration project provides for a distinct type of IT project suitable to meet the study objectives. The data was collected through semi-structured interviews, and a thematic analysis was conducted to identify success factors, mechanisms, and IT project success criteria.

Findings: The findings revealed that there are several success criteria measures viz. the traditional project management triangle (cost, scope and time), non-functional requirements, customer satisfaction, other stakeholders' requirements, quality assurance, organisational benefits, and learning and growth. Further, there are several critical success factors including project management factors, team-related factors, organisational factors, business process factors, and governance and risk factors. There are core mechanisms that are pivotal to the success of the IT project which includes project visibility, teamwork, and effective communication.

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Chapter 1: Introduction

1.1 Background

Organisations are constantly faced with competition with innovation being the main differentiator which sets them apart (Rai, Maruping, & Venkatesh, 2009; Singh, Keil, & Kasi, 2009). IT projects have been identified to be one of the main contributors to an organisation's competitive advantage especially when IT projects are aligned to business strategy (Rai et al., 2009). Furthermore, organisations have realized that they need better ways to cope with the dynamic and ever-changing environment with its encompassing challenges (Maruping, Zhang, & Venkatesh, 2009; Singh et al., 2009).

Organisations hence require increased capacity in their project management skills, better business processes, and governance as well as improved senior management support and involvement for any IT project to succeed (Liu, Zhang, Keil, & Chen, 2010; Singh et al., 2009). Other factors which contribute to IT project success include better communication, management of user expectations, project team competencies, effective project management, team motivation, projects yielding high value for the organization and its customers, transparency, as well as certainty on the expectations of what the success of a project is constituted of (Davis, 2017; De Bakker, Boonstra, & Wortmann, 2010; Pankratz & Basten, 2018; Papke-Shields, Beise, & Quan, 2010; Yang, Huang, & Wu, 2011). A data migration project is a type of IT project, and as such is well encapsulated under the IT project umbrella (Badrinarayanan, Krishnan, & Andireddi, 2017; Idu, 2012; Makad, 2017; Thalheim & Wang, 2013). According to Idu (2012), data migration projects are rare, and relatively more complex than other IT projects. This is expected to be the same in Africa, and South Africa, where this study is situated (Idu, 2012).

1.2 Views on IT Project Success

IT project success has been traditionally defined as any project which has been completed (1) within the specified time, (2) within the budget, and (3) to the satisfaction of the end-user expectations of that project (De Bakker et al., 2010; Malach-Pines, Dvir, & Sadeh, 2009). There is a recurring debate as to whether the aforementioned

definition is sufficient due to various factors which can give rise to a project being over-budget or taking longer than anticipated to complete, especially if the specifications are all attended to and the intended outcome is realised (Ika, 2009; Malach-Pines et al., 2009). To this end, Ika (2009) and Papke-Shields et al. (2010) argue that the three traditional measures of project success are incomplete and misleading. They suggest that other considerations needed to be added to the list of success criteria including stakeholder satisfaction. The stakeholders whose perceptions matter as far as the IT project is concerned include senior management, project sponsors, investors, suppliers, and customers (Davis, 2014; Mir & Pinnington, 2014). Further, IT projects/data migration projects differ in size and complexity and are generally unique. An absolute and universal definition of what constitutes project success would be infeasible, and various industries have different points of view as far as IT project performance is concerned within the IT arena (Mir & Pinnington, 2014; Serrador & Turner, 2015). Some make a clear distinction between project management success which is the traditional measurement of project success based on time, budget, and performance/quality, versus the actual project success which is measured by the level of satisfaction with the IT project of the above-mentioned stakeholders (Mpazanje, Sewchurran, & Brown, 2013; Radujković & Sjekavica, 2017; Sebestyen, 2017; Serrador & Turner, 2015). According to Mpazanje et al. (2013), project objectives may not necessarily be static, and in some instances what determines success may be unclear at the beginning of the project which allows flexibility as far as the scope is concerned. Mpazanje et al. (2013) also found that there was a need to have project objectives defined upfront which would necessitate stakeholder commitment and involvement, even though these do not necessarily need to be prescriptive.

1.3 Research Motivation

There is much emphasis in literature on success factors as well as success criteria, and not much work has been published on the relationships between them - there exists a ‘black box’ regarding the relationship between success factors and success criteria (Pankratz & Basten, 2018). According to Pankratz and Basten (2018), a mechanism is a link between success criteria and critical success factors, and it facilitates the relationship and thus acts as the mediator or the core which ultimately gives rise to IT

project success. This ‘black box’ restrains practitioners from implementing effective measures as far as influencing success criteria. The ‘mediating’ effects between critical success factors and success criteria may provide clarity on the nature of their relationships, but remain unexplored and thus limits the comprehension of mechanisms underlying IS project success (Pankratz & Basten, 2018; Radujković & Sjekavica, 2017). The ‘black box’ between the input measures (success factors) and output measures (success criteria) of IS project success is illustrated in Figure 1 below (Pankratz & Basten, 2018; Radujković & Sjekavica, 2017; Sebestyen, 2017). It was discovered that there are limited sources of literature and studies conducted which seek to uncover and examine the relationship between success criteria and critical success factors, and thus this study further explores the connections in order to propose a enriched model based on the research findings below.

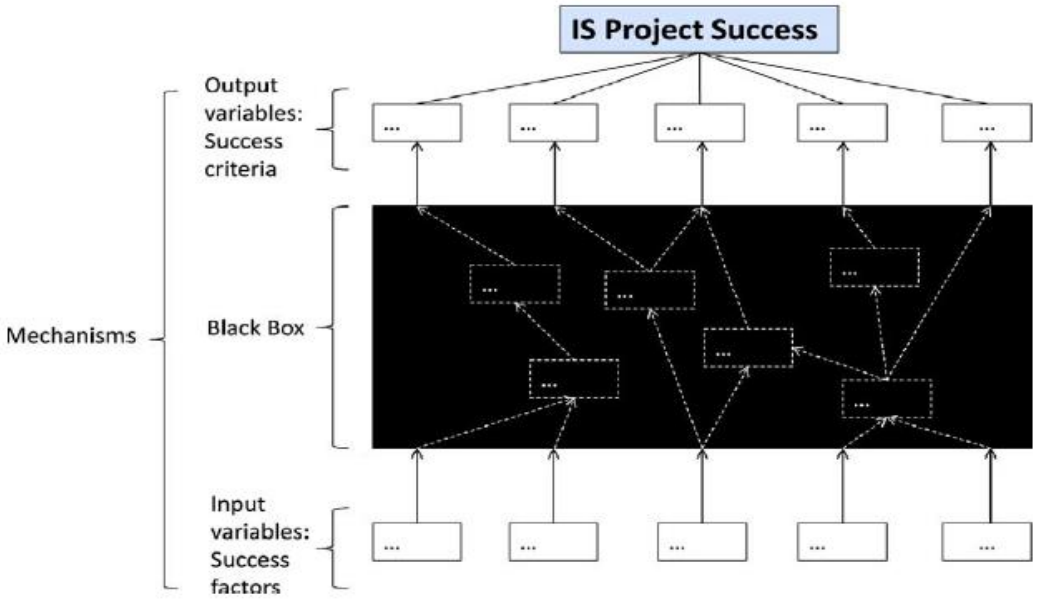


Figure 1: The Black Box of IS Project Success Mechanisms (Pankratz & Basten, 2018).

It is against this background that the study will try to understand the relationship between success measures used in the project, the critical success factors as well as mechanisms as proposed by Pankratz and Basten (2018).

1.4 Research Objective

The purpose of this study is to explore success factors, success criteria, and mechanisms and how they relate to enable IT project success. As such the objectives of this study include:

- To identify and discuss the role played by success criteria (output variable) in an IT project;
- To identify and discuss the role played by success factors (input variables) in an IT project;
- To identify and discuss the role played by mechanisms and their impact thereof in an IT project; and
- To identify, investigate, and explore the interrelationships between the aforementioned constructs and how they impact the success of an IT project.

1.5 Dissertation Layout

The research consists of eight chapters and these chapters will be described below:

- Chapter one outlines the introduction, research overview, and background, in addition to addressing the research question.
- Chapter two sets out the literature review conducted which ultimately leads to the theoretical model which was utilised for data collection.
- Chapter three provides the research methodology followed.
- Chapter four sets out the research findings from the thematic analysis conducted.
- Chapter five provides a discussion of the findings in relation to the literature review and the implications thereof.
- Chapter six provides the conclusion, the study limitations, as well as recommendations for future research.
- A list of all references used as the compilation of the empirical reports.
- All appendixes that were used to support this study.

Chapter 2: Literature Review

2.1 Literature Review Methodology

As suggested by Oosterwyk et al. (2019) the study searched firstly the basket of eight journals of the Association for Information Systems (AIS), as well as other relevant journals including the Project Management Journal, the International Journal of Operations and Production Management, the International Journal of Project Management, and the Information & Management Journal. In addition to the aforementioned journals there were other sources considered which included conferences that contained relevant information on the subject matter, and some thought leaders within the IS discipline. Various search terms were considered and used to search through these sources of literature, including keywords such as "IT project success", "IS project success", "data migration project success", "IT project performance", and "project management success". The period under the review specified was journals from 2008 to 2019 to ensure that a ten-year runoff was sufficiently covered. The initial analysis of the search based on the terms alluded to above yielded over 200 articles. The results were refined to select only the relevant sources and eliminated any sources which provided broad results based on other topics that were not part of the subject matter of this study. The various sources of literature used are reported in Appendix A.

2.2 Success Criteria

This section will discuss the success criteria variables as identified in literature as far as IT project success is concerned. These criteria are project management success, non-functional requirements, customer satisfaction, other stakeholders' requirements, and organisational benefits, and each will be discussed in turn.

2.2.1 Project Management Success as the Project Triangle

IT project success is typically measured in terms of the project triangle viz. sticking with the agreed budget, completing the project within the specified timeframe, and ensuring that the functionality and specifications which have been set upfront are all satisfied (Davis, 2017; Pankratz & Basten, 2018). Further, the significance placed on

project success criteria generally changes over time, depending on the stakeholder, and their respective needs at a certain point in time (Davis, 2017; Joslin & Müller, 2015; Serrador & Pinto, 2015).

2.2.2 Non-Functional Requirements

There are often non-functional requirements in IT projects that need to be clearly defined from the onset, and closely monitored to ensure that there is coherence with deliverables the project team is producing (Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017; Sebestyen, 2017). There is no consensus as far as the definition of non-functional requirements (Chung & do Prado Leite, 2009; Pavlovski & Zou, 2008). However, there is some agreement that non-functional requirements are important to the success of any IT project (Chung & do Prado Leite, 2009; Pavlovski & Zou, 2008). Non-functional requirements refer mainly to constraints of an IT project and/or 'soft' goals that an IT project has to deliver on, notwithstanding the main goals or objectives to be delivered (Pavlovski & Zou, 2008). Non-functional requirements are generally difficult to track, monitor, and measure before the delivery of an IT project (Chung & do Prado Leite, 2009). According to Sebestyen (2017), success criteria should consider the inclusion of factors connected to the sustainability of the project in instances where the end product produced is operational or commercially viable.

2.2.3 Customer Satisfaction

One of the most important project success criteria is customer satisfaction (Mazur et al., 2014; Sebestyen, 2017). Pankratz & Basten (2018) argue that there are multiple studies conducted as far as the relationship between customer satisfaction and IT project success is concerned, but that there is no consistent definition of customer satisfaction with IT projects.

2.2.4 Other Stakeholders' Requirements

IT project success measurement needs to encompass a more inclusive and holistic approach to consider all stakeholders' requirements (McLeod, Doolin, & MacDonell, 2012; Savolainen, Ahonen, & Richardson, 2012). Proper consideration must be given to the identification of stakeholders involved in an IT project, the level of interest in its

success, and the relevance of certain stakeholders (McLeod, Doolin, & MacDonell, 2012; Savolainen, Ahonen, & Richardson, 2012).

2.2.5 Organisational Benefits

Organisational benefits generally encapsulate three main criteria viz. the organisation's profitability, its people (human capital), and the environment in which it operates. It is thus important for organisations to consider the aforementioned factors before embarking on an IT project (Joslin & Müller, 2015; Sebestyen, 2017). Human capital is the biggest asset any organisation possesses (Sebestyen, 2017). Human capital development is often sidelined when considering the success criteria of projects. One of the reasons for this is the fact it is not easily measurable like most of the technical aspects, and thus there is generally less research conducted on this subject relative to traditional factors (Joslin & Müller, 2015; Sebestyen, 2017).

Success Criteria as identified from various sources of literature

Success Criteria	**References**
Project management criteria (Time, Cost, Scope)	Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017; Sebestyen, 2017
Non-functional requirements	Joslin & Müller, 2015; Sebestyen, 2017
Customer satisfaction	Mazur, Pisarski, Chang, & Ashkanasy, 2014; Sebestyen, 2017; Serrador & Pinto, 2015
Other stakeholders' requirements	Berssaneti & Carvalho, 2015; Joslin & Müller, 2015; Serrador & Turner, 2015
Organisational benefits	Berssaneti & Carvalho, 2015; Joslin & Müller, 2015; Serrador & Turner, 2015; Sebestyen, 2017

Table 1: Success Criteria as identified from various sources of literature

2.3 Success Factors

There has been a considerable amount of work published as far as IT project success factors are concerned. Significant success factors include good project management, senior management support, communication, clearly defined objectives, good

governance, and team competence (Pankratz & Basten, 2018). This section will set out and discuss these success factors as they are presented in literature. It is also noted that while many of these success factors allude to IT projects in general, caution needs to be exercised as IT projects are not homogeneous, e.g. data migration projects generally have characteristics and complexities different to other IT projects (Makad, 2017; Moeini & Rivard, 2018; Oracle, 2011). There is generally no consensus of a finite and universal set of IT project success factors, and this does not surprise some researchers due to the subjective manner in which IT project success is often measured (Idu, 2012; Pankratz & Basten, 2018; Serrador & Pinto, 2015; Thalheim & Wang, 2013).

2.3.1 Project Management

Project management is one of the most researched topics in the IT arena, whether in general or specifically looking at data migration projects. Project management guidelines and principles are generally universal (De Bakker et al., 2010; Malach-Pines et al., 2009; Yang et al., 2011). A detailed project plan encapsulates a whole range of sub-constructs which include the roles of a project manager and a project sponsor (De Bakker et al., 2010; Malach-Pines et al., 2009; Mir & Pinnington, 2014; Yang et al., 2011). A project plan generally includes project risk and governance, the budget required, a communication plan, an indication of the start and the end date of each deliverable, and who will sign-off on those deliverables (De Bakker et al., 2010; Malach-Pines et al., 2009; Mir & Pinnington, 2014; Yang et al., 2011).

2.3.1.1 Project Manager

The role of a project manager is to facilitate the communication channels between all the stakeholders involved in a project and ensure that issues identified are resolved and include the project sponsor and/or owner where applicable. Further a project manager is meant to motivate the project, and ensure all resources required for the success of the project are available (De Bakker et al., 2010; Malach-Pines et al., 2009; Mir & Pinnington, 2014; Yang et al., 2011). A project manager is typically the steering force behind any project, and that includes drawing up a plan which addresses resource management, from human capital to actual materials or tools used in the project (Mir & Pinnington, 2014). Further, a project manager and/or project sponsor need to form good, meaningful relationships with various stakeholders and teams within the business

to help them to get the required resources when needed (Davis, 2014; Mir & Pinnington, 2014).

2.3.1.2 Project Sponsor

Customer needs and/or requirements should always be a major consideration before embarking on any project as it may have an undesirable impact on them resulting in loss of revenue in the short term, medium-term, and possibly long term (Lam, Sleep, Hennig-Thurau, Sridhar, & Saboo, 2017; McLeod, Doolin, & MacDonell, 2012). The project sponsor is a pivotal role in project success or failure, as the role ensures that the project manager and the project team have the necessary tools and resources to achieve the set mandate(s) (McLeod et al., 2012; Radujković & Sjekavica, 2017). Further, the project sponsor typically approves budgets and signs off on several milestones/deliverables in a project (McLeod et al., 2012; Radujković & Sjekavica, 2017). Project sponsors also ensure that the business needs, as well as customer needs, are aligned to the objectives of an IT project (McLeod et al., 2012). A project sponsor should typically be a senior executive within the business, not necessarily a senior executive from an IT department. The sponsor also ensures IT-business alignment is considered and that business drives IT-related projects as part of a unified strategy (Davis, 2014; Taherdoost & Keshavarzsaleh, 2016). Project sponsors are generally the main people concerned with the survival/success of a project, and thus can escalate matters to relevant personnel and/or departments for urgent actioning where required, and address any other stakeholder concerns which may arise (McLeod et al., 2012; Nixon, Harrington, & Parker, 2012).

2.3.1.3 Resources Management

Resource management addresses the need for certain resources to achieve the success of the IT project (Davis, 2014; Mir & Pinnington, 2014; Todorović, Petrović, Mihić, Obradović, & Bushuyev, 2015). Resource management also includes procurement as well as human resource management, and the project manager will be central in ascertaining all relevant information and crafting a concrete story which will be presented to senior management, and to the projects office where applicable (De Bakker et al., 2010; Papke-Shields et al., 2010).

2.3.2 Team Factors

Team competence and skills are among the main critical success factors (Davis, 2014; Radujković & Sjekavica, 2017; Todorović et al., 2015). Team competence alludes to the project team members' competence as well as their motivation. Competence also creates transparency in general (Davis, 2014; Pankratz & Basten, 2018; Radujković & Sjekavica, 2017). Team competence is capacitated by ensuring that team development is encouraged, and various specialised skills that are available in an IT project (e.g. data migration project) (Davis, 2014; Serrador & Turner, 2015). There are other material factors to consider which have a positive impact on team competence, and these include team building events, reward and recognition, consideration of cultural differences and practices, and time-off after certain long-stretched deliverables (Davis, 2014; Serrador & Turner, 2015).

2.3.3 Senior Management

Senior management support is one of the main enablers of IT project success as they ultimately approve budgets, resource allocation, and can resolve red flags that pose a threat to the success of a project (Davis, 2014; Mir & Pinnington, 2014; Nixon et al., 2012; Pankratz & Basten, 2018). However, weak senior management support does not necessarily lead to IT project failure (Ngwenyama & Nørbjerg, 2010). When project teams are strong as far as skills and competencies are concerned and alliances are formed between stakeholders success is still possible (Ngwenyama & Nørbjerg, 2010). Project teams have well-established relationships and networks within their organisations and/or externally generally thrive without much intervention from senior management (Davis, 2014; Nixon et al., 2012). It has been also noted that a strong project manager, and a project team's commitment and desire to succeed also necessitate IT project success without much involvement from senior management (Ngwenyama & Nørbjerg, 2010).

It is also noted that part of the reason it is important to create interaction between the project sponsor and senior management is to ensure that there is no conflict between the objectives of each of these stakeholders (Langer, Slaughter, & Mukhopadhyay, 2014; Nixon et al., 2012). Project sponsors are typically concerned about the survival

of the project and ensuring it delivers on its set mandate (Nixon et al., 2012). Meanwhile, senior management is concerned about ensuring that the project achieves the business objectives, and strategic benefits are realised by the organisation (Davis, 2014; McLeod et al., 2012; Nixon et al., 2012). According to Davis (2017), there is usually some misalignment between the perceptions of IT project success between senior management, the project team members, and other stakeholders. It is the responsibility of the project sponsor/owner to ensure that any misalignment is addressed and resolved before the start of any project (Maqbool, Sudong, Manzoor, & Rashid, 2017; Taherdoost & Keshavarzsaleh, 2016). Ideally, a project sponsor is in senior management which means that they are well-positioned to facilitate such high-level discussions (Radujković & Sjekavica, 2017). Management attention and support leads to management commitment to a project (Pankratz & Basten, 2018).

2.3.4 Organisational Factors

Several organisational success factors were identified which will be discussed in the following sections below viz. communication, organisational culture, training, and development.

2.3.4.1 Communication

Communication is the process of distributing information to other stakeholders who form part of the same project team (Yang et al., 2011). Effective communication is one of the most significant success factors as it is a means of providing constant feedback from the various stakeholders involved in an IT project (Papke-Shields et al., 2010). Consequently, a good communication plan has to be drawn up and incorporated into a project management plan (Maqbool et al., 2017; Papke-Shields et al., 2010). Communication also links to the achievement of some of the other success factors such as clarity, and transparency (Maqbool et al., 2017; Papke-Shields et al., 2010). The level of communication can also be seen by the level at which team members and/or other stakeholders exchange thoughts, ideas, opinions with others to ensure smooth completion of the project mission (Maqbool et al., 2017; Yang et al., 2011). Effective communication is precipitated by good leadership, which helps achieve high performance, and boosts team morale (Khatavakhotan & Ow, 2012; Maqbool et al., 2017; Yang et al., 2011). Communication also ensures that with risk management, the

proper action is taken to address concerns that arise during an IT project. Risk mitigation strategies are explored and the best one is implemented and communicated to relevant stakeholders (Khatavakhotan & Ow, 2012; Maqbool et al., 2017; Stoica & Brouse, 2013; Yang et al., 2011).

2.3.4.2 Culture

One of the most overlooked success factors is organisational culture (Radujković & Sjekavica, 2017). Project managers and/or other stakeholders have to be mindful of existing cultural practices that have been entrenched in organisations and ensure that the planning and execution of the project do not necessarily conflict with such norms. Buy-in from the project sponsor, senior management, and other relevant stakeholders helps to alleviate any conflicts (Davis, 2017; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). Organisational culture also pertains to ensuring that different cultural and/or religious beliefs are respected and taken into account as part of the planning and strategy sessions, as this promotes human dignity as well as understanding and acknowledgment of each person's beliefs (Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). IT projects are not 'culture' neutral, which further reiterates the point that culture plays a pivotal role in the success of IT projects (Geeling, Brown, & Weimann, 2017). Humans generally influence methods in which IT projects are implemented, thus creating various perspectives that are informed by culture (Geeling et al., 2017). Culture plays a role in various phases of an IT project thus reiterating the strong relationship between culture and the success or failure of an IT project (Geeling, Brown, & Weimann, 2019).

2.3.4.3 Training and Support

One of the most important success factors is training and support in an IT project. The costs associated with this success factor generally vary depending on the size of the project and/or organisation (De Bakker et al., 2010). Project managers must be cognisant of the fact that learning how to utilise a relatively newer system may take longer (De Bakker et al., 2010; Mazur, Pisarski, Chang, & Ashkanasy, 2014). Project managers and change managers need to take into account the type of common skill sets which exist in an organisation as part of training and support that will be required to

adapt in a changing environment with newly developed or enhanced systems (De Bakker et al., 2010; Mazur et al., 2014; Papke-Shields et al., 2010).

2.3.4.4 Human Capital

Human capital encapsulates flexibility and ambition, verbal abilities, confidence, and leadership to mention a few (Sebestyen, 2017). Human capital generally focuses attention on different cultural backgrounds and leadership styles which can create complexities in certain circumstances, and organisations need to be mindful of these intricacies (Mazur, Pisarski, Chang, & Ashkanasy, 2014; Sebestyen, 2017; Serrador & Pinto, 2015).

2.3.5 Risk Management

According to Sebesten (2017), risk management is the art and science of identifying, analysing, and responding to risk(s) uncovered throughout the various life cycles of a project. Project risk management typically involves the identification of all potential problems in a consolidated risk management plan, and how they might obstruct or hinder project success (Radujković & Sjekavica, 2017; Sebestyen, 2017). Risk management generally consists of four phases viz. risk identification, risk assessment, risk planning, as well as risk monitoring (Sebestyen, 2017). The four phases include qualitative and quantitative risk analysis as part of a more inclusive and complete process (Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). It has been identified that the magnitude of a risk management plan is directly related to the size of the IT project embarked on and/or the size of the organisation (Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017).

2.3.6 Governance

The lack of or inadequate organisational/IT governance can contribute to project success or failure, and thus organisations need to have strong policy frameworks, which are implemented as part of their strategy and thus constantly monitored (Mir & Pinnington, 2014). Governance also involves the process of investigating or establishing business processes to ensure coherence and collaboration between teams/departments which have been affected embarking on an IT project (Alias,

Zawawi, Yusof, & Aris, 2014; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017).

2.3.7 Business Process Management

Business process management (BPM) generally has a positive impact on IT project success and thus should be regarded as one of the success factors (Schierholz & Al-Mudimigh, 2007; Žabjek, Kovačič, & Štemberger, 2009). The realisation of business process management relies on the existence of a process owner who typically needs to be someone who is in top management to ensure alignment to business strategy and provide the necessary leadership (Schierholz & Al-Mudimigh, 2007; Žabjek et al., 2009). Process identification and documentation is also an important consideration as this is meant to provide a roadmap of core business processes (Schierholz & Al-Mudimigh, 2007; Žabjek et al., 2009). This enables organisations to provide a future operating model through process reengineering (Schierholz & Al-Mudimigh, 2007; Žabjek et al., 2009). The process of identification and documentation is regarded as critical as it will impact every employee in the organisation as far as their unit tasks are concerned (Schierholz & Al-Mudimigh, 2007; Žabjek et al., 2009). It is thus important for an organisation to be cognisant of the impact, and take the necessary steps to manage these organisational changes, and communicate effectively (Alias, Zawawi, Yusof, & Aris, 2014; Pimchangthong & Boonjing, 2017). A summary of the success factors gleaned from the literature review is provided in Table 2 below.

Critical Success Factors	References
Project Management Factors (Project Plan, Project Manager, Project Sponsor, Resource Management, Project Risk)	Davis, 2014; Ika, 2009; Pankratz & Basten, 2018
Team related factors (Skills and Competencies, Morale, Reward and Recognition)	Pankratz & Basten, 2018; Papke-Shields et al., 2010
Senior Management Factors	Davis, 2014; Ika, 2009; Pankratz & Basten, 2018
Organisational Factors (Communication, Culture, and Training and Development)	Makad, 2017; Moeini & Rivard, 2018; Oracle, 2011
Risk Management	Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017
Governance	Mir & Pinnington, 2014; Alias, Zawawi, Yusof, & Aris, 2014; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017
Business Process Management	Schierholz & Al-Mudimigh, 2007; Žabjek, Kovačič, & Štemberger, 2009; Alias, Zawawi, Yusof, & Aris, 2014; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017

Table 2: Success Factors as identified from various sources of literature

2.4 Mechanisms

There is one central mechanism viz. project-related motivation that is regarded as paramount to the success of IT projects, and it is supported by several success factors (Pankratz & Basten, 2018; Pimchangthong & Boonjing, 2017). The significance of this central mechanism is evidenced by the fact that it emerged to be the most common mechanism from several sources of literature (Pankratz & Basten, 2018; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017; Taherdoost & Keshavarzsaleh, 2016). There is a clear distinction between project-related motivation and general team motivation - the former pertains to the actual project, its fundamental rationale, and the urgency necessary to achieve its goals/objectives, while the latter is concerned with the team's motivation in achieving its given tasks or deliverables in the given environment or industry that it operates under (Pankratz & Basten, 2018; Taherdoost & Keshavarzsaleh, 2016; Todorović et al., 2015). There is an opportunity for further studies to be conducted as far as mechanisms are concerned, as literature generally discusses the critical success factors, and often separately, success criteria (Pankratz & Basten, 2018; Taherdoost & Keshavarzsaleh, 2016; Todorović et al., 2015).

2.5 Modified Black Box Model

Figure 2 below shows a consolidated view of findings from literature, with project management, senior management support, team factors, organisational factors, BPM, and risk and governance factors as the input variables (success factors). Risk management emerged as one of the success factors key to the success of IT projects (Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). Similarly, governance was noted as an important success factor as it guides how certain decisions will be made, and also considers who will make the decisions (Alias et al., 2014; Mir & Pinnington, 2014; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). Another success factor that emerged included business process management (Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017; Schierholz & Al-Mudimigh, 2007; Žabjek et al., 2009). Data migration projects as a type of IT project

are deemed as inheriting the characteristics discussed above (Idu, 2012; Pankratz & Basten, 2018; Serrador & Pinto, 2015; Thalheim & Wang, 2013).

The project-related motivation mechanism is at the core of the project and acts as the link between the input variables and the output variables.

Customer satisfaction, non-functional requirements, other stakeholders' requirements, as well as organisational requirements were identified to be the output variables (success criteria).

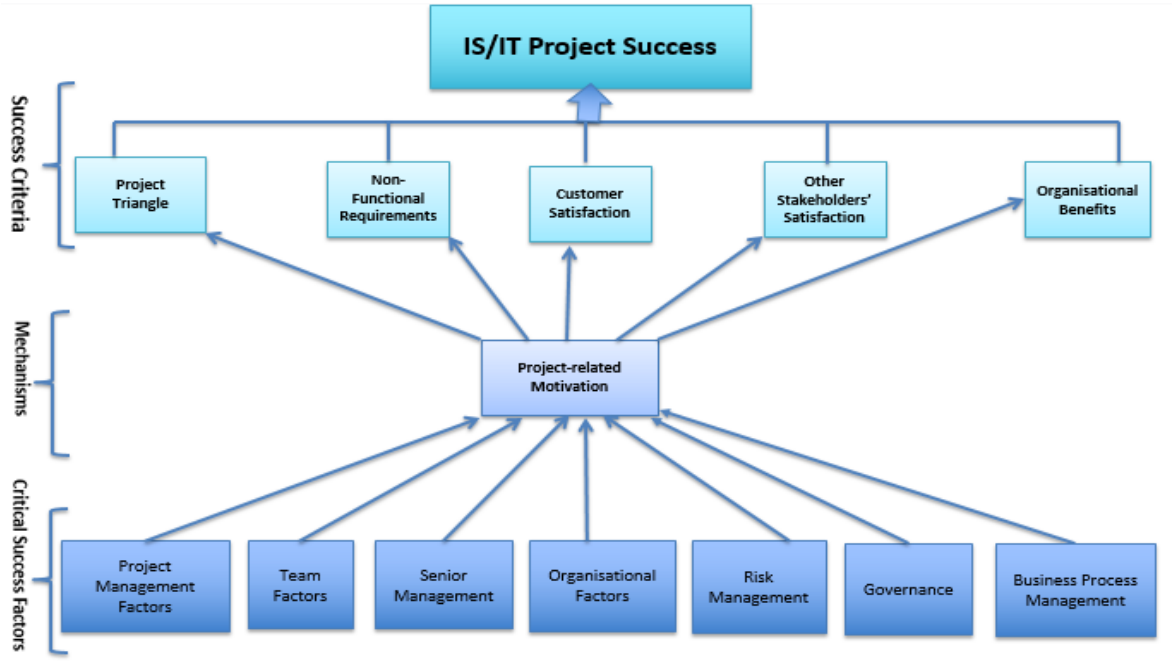


Figure 2: *Modified Black Box of IS Project Success Mechanisms (Mazur et al., 2014; McLeod et al., 2012; Mir & Pinnington, 2014; Nixon et al., 2012; Pankratz & Basten, 2018; Radujković & Sjekavica, 2017; Sebestyen, 2017; Serrador & Turner, 2015; Taherdoost & Keshavarzsaleh, 2016).*

2.6 Gaps in Literature

The section below will discuss the gaps identified in literature about IT project success. There are many studies in literature that have been conducted as far as IT project success is concerned. A considerable number of studies cover critical success factors and separately a number focus on success criteria measures. Mechanisms, as introduced in our model above, are rarely discussed, and their role as far as the interaction which

occurs between success criteria measures as well as critical success factors is little known. This necessitates combining and consolidating all the three major themes and investigate the link between them which ultimately leads to IT project success. The distinctness and complexity of some IT projects such as data migration projects sometimes create difficulty for studies to be conducted on such subject matter, which means there are relatively limited studies or cases to be used as the basis for reference and/or ‘best practices’.

It has been also identified that many studies limit the focus to project management success criteria such as cost, time, and scope which are traditionally used to measure IT project success. The success of an IT project is a subjective matter, which results in different views and perspectives as far as whether a project truly succeeded or failed.

South Africa is a middle-income developing economy with the potential to be a key source of knowledge based on experiences and diverse sectors of the economy, and IT is one of those sectors. It is thus beneficial that more studies are conducted to provide more knowledge and an academic research footprint especially on unique studies where very little or limited knowledge exists.

Chapter 3: Research Methodology

The section below will set out the research methodology which was followed when conducting this study, with a specific focus on philosophical stance, the approach to theory, the research strategy, as well as sampling which are discussed in ensuing sections below.

3.1 Philosophy

Interpretive research aims to derive an understanding of the context of the social world, which allows for understanding why IT projects succeed by exploring the relationships, and interactions between critical success factors, mechanisms, and success criteria (Pankratz & Basten, 2018; Walsham, 2018). Further, interpretive research is ideal when dealing with perceptions of power relationships and politics as participants in the study tend to be cautious when expressing their opinions and/or views on certain matters should the study be more formally written. Interviews are arguably the best means to conduct an analysis of this nature as it will be more interactive to obtain the best possible reasons why IT projects succeed (Walsham, 2018).

3.2 Approach to Theory

This research is inductive in the sense that while it utilised the Black Box Mechanism model to guide data collection, it allowed for the construction of a new model that is specifically applicable to the case based on observations and conclusions drawn from the case study.

3.3 Timeframe

The research time horizon was cross-sectional as the research focused on the project team's reflection, views, and explanation at a particular point in time of the project journey.

3.4 Strategy

The strategy adopted for this study was a single case study as it offers a more in-depth analysis of a single project and thus was able to get to a deeper understanding of mechanisms (Braun & Clarke, 2006). Interviews were adopted as a way to collect data

as they seek to establish why data migration projects succeed. Perspectives from a wide range of audiences such as the project team, executive management, and project sponsors were obtained. Their views and perceptions about the data migration project differed and follow-up questions and elaborative responses needed to be considered, which is why a survey would not have been suitable for this type of study. Appendix K contains the detailed questions used in the semi-structured interviews for ease of reference.

3.5 Case Selection

Case selection and validity of the results of the study are determined by the subject matter knowledge and data gathering techniques employed by the researcher during a qualitative study (Plümper, Troeger, & Neumayer, 2010). Further, it is affirmed that qualitative studies typically deal with a relatively small sample size as far as cases are concerned (Plümper et al., 2010). The researcher has a vast knowledge of the subject matter as he played an active role in the project from time to time, and hence his knowledge, subjective as it may be, has aided in improving the data gathering process, as well as analysis as proposed by Plümper et al. (2010).

3.6 Target Population

The target population in the case is the data migration project team, project sponsor, project manager as well as data platform managers as they were actively involved in the project of migrating data from different platforms.

3.7 Sampling Strategy

Sampling is one of the core components of qualitative research in relation to data collection and analysis (Robinson, 2014). Further, a single case study was utilized as the research strategy, and sample sourcing was considered as far as the research participants were concerned to avoid bias, and ensure any ethical considerations were also accounted for as per best practices (Robinson, 2014). The sample size is determined by theoretical and practical considerations around the research study (Robinson, 2014). A single case study is typically selected due to its uniqueness, and very few or limited similar research studies have been conducted in a similar setting or

environment (Robinson, 2014). To this end, this study conducted semi-structured interviews with the team involved in the project, which included the project sponsor, project manager, technical experts, testers and any other identified relevant personnel. Table 3 below shows the profile and the years of experience of the project team involved in the data migration.

Code	**Organisational Role**	**Year of Experience**
CTS	Claims Technical Specialist	5 years
DMTS	Data Migration Technical Specialist	27 years
PA	Project Administrator	1 year
PSPM	Project Sponsor/Project Manager	30 years
SAM	Systems Admin. Manager	15 years
SPM	Strategic Program Manager	25 years
TLCC	Team Leader: Call Centre	20 years
TLMRM	Team Leader: Medicine Risk Management	11 years

Table 3: The participants' profiles and years of experience.

The codes depicted in Table 3 above will be utilised during the data analysis and reporting thereof in this study. CTS was responsible for the system set up as well as testing some components of the system to ensure alignment between the source system as well as the target system. DMTS was responsible for the actual execution of the data migration and had to liaise with other team members to ensure everyone understood what was expected of them, even those who worked from other offices. PA was tasked with assisting the project manager in ensuring the smooth delivery of the project as efficiently and cost-effectively as possible, which meant the setting up of meetings, keep track of items to do, and ensuring follow up with relevant stakeholders and communication of the project as a whole. PSPM was initially the project sponsor for the data migration project due to the vast amount of experience in IT projects and data migrations in general. Due to several issues experienced during the IT project (data

migration) in relation to project managers, PSPM was then requested to take over as the project manager since they could not find a suitable replacement.

SAM was the systems admin manager responsible for providing technical support to the project as the main custodian of System B (see Table 5). SAM was also responsible for sign-off on the testing aspect of the project, advising the overall business as far as the status on the technical aspects of the project, and also providing guidance to the team as far as how some of the complex matters should be dealt with in consultation with PSPM. SPM was tasked with the overall project delivery which included sign-off on budgets, timelines for deliverables, stakeholder management including clients, the executive committee, and the board of directors, as well as project risks and scope. TLCC was responsible for the call centre management which ultimately dealt with all the complaints as a result of the data migration from clients, providers, and/or other stakeholders as a result of incorrect processing of a claim and payment thereof, as well as other general client maintenance issues such as changes of bank accounts, personal information among others. TLMRM was responsible for ensuring that a component of the migration occurred smoothly and seamlessly, and this included the migration of client plans, as well as authorisations thereof, and testing these against the source data.

3.8 Data Analysis Procedure

Thematic analysis is defined as a method for identifying, analysing, and reporting patterns (themes) within a set of data (Braun & Clarke, 2006). Further, it organizes and describes data in detail for analysis (Braun & Clarke, 2006). This study is qualitative and thus was analysed through a thematic approach as it provided a platform for capturing and formulating conclusions from qualitative data, and also considers factors that were not accounted for as priority from the onset The objective of thematic analysis is to analytically examine and take account of events emanating from real life, and break them up into relatively smaller units of text or content and label them (Vaismoradi, Turunen, & Bondas, 2013).

Computer-assisted qualitative data analysis software (CAQDAS) helps researchers to accurately and transparently provide a picture of the data whilst also producing an audit of the data analysis process as a whole which has been lacking in qualitative research

(Welsh, 2002). Version 12 of Nvivo, a CAQDAS available to UCT for research use purposes, was utilised to process, organise, and analyse the transcription of data improving transparency and methodology (Welsh, 2002).

Appendices B to E contain the detailed Nvivo coding conducted on the data collected, using the 15-point steps and/or checklist referred to in Table 4 below. The data was collected through the use of a single case study by employing semi-structured interviews. The data was then transcribed and a thematic analysis was conducted to enable the transcribed data to produce themes that emerged during the semi-structured interviews. The various themes which emerged in the analysis were then grouped in accordance with the modified model discussed above in section 2.4, and the results were compared against this model, and findings were then reported accordingly.

Appendix B shows the main themes which emerged in the thematic analysis. Appendix C shows the sub-themes which also emerged in the analysis. Appendix D shows the roles and responsibilities of the various research participants, and Appendix E shows the overall project mind map graphically showing the key themes are structured and main contributors thereof.

Table 4 below shows a 15-point checklist for a good thematic analysis as proposed by Braun and Clarke (2006), and this was utilised as a guideline for the data analysis.

PROCESS	NO	DESCRIPTION
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.
Coding	2	Each data item has been given equal attention in the coding process.
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead, the coding process has been thorough, inclusive, and comprehensive.
	4	All relevant extracts for all each theme have been collated.
	5	Themes have been checked against each other and back to the original data set.

PROCESS	NO	DESCRIPTION
	6	Themes are internally coherent, consistent, and distinctive.
Analysis	7	Data have been analysed - interpreted, made sense of - rather than just paraphrased or described.
	8	Analysis and data match each other - the extracts illustrate the analytic claims.
	9	Analysis tells a convincing and well-organised story about the data and topic.
	10	A good balance between analytic narrative and illustrative extracts is provided.
Overall	11	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are explicated.
	13	There is a good fit between what you claim you do, and what you show you have done – i.e. described method and reported analysis are consistent.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as active in the research process; themes do not just 'emerge'.

Table 4: A 15-point checklist of steps to follow for good thematic analysis (Braun & Clarke, 2006, p. 16).

Table 5 below shows the various codes which were utilised during the data analysis and findings thereof for ease of reference and navigation throughout this study.

Code	Description
System A	Source System
System B	Target System
Entity A	The Main Holding Entity
CIO	Entity A's Chief Information Officer
CEO	Entity A's Chief Executive Officer
Client A	The Main Client whom the migration was done for
PO	The Principal Officer for Client A
Location A	The location where most of the project team and Client A was situated
Location B	The location where few of the project team members were located
Project X	The data migration which occurred earlier which was deemed as a dismal failure by Entity A

Table 5: The various codes used in Nvivo which will be utilised in the case study.

3.9 Ethics and Confidentiality

The researcher was employed by the organisation where this study was conducted, and the company embarked on a data migration project. Further, the researcher had a close working relationship with most of the project team members. Permission to interview project team members, project sponsor, as well as other executives who were actively involved in the decision to migrate the data from different platforms was obtained from the project sponsor, and an agreement was reached that the names of the interviewees, as well as the name of the organisation, were to be kept anonymous. The researcher completed the required Commerce Faculty Ethics Form, which was subsequently approved by the Ethics Committee. Appendices F to J contain the relevant information as far as Ethics Application, and approval thereof. Table 7 shows the appendices which pertain to the Ethics Approval process.

Appendix No	Description

F	UCT Ethics Application
G	UCT Ethics Approval
H	UCT Cover Letter to the request for conducting interviews
I	Management Consent to conduct interviews
J	Participant Consent to conduct participate in interviews

Table 6: The appendices used for Ethics Application

Chapter 4: Findings

The section below will set out the research findings from the thematic analysis conducted using Nvivo as outlined in the Data Analysis section above. Further, the structure of the findings is based on the modified Black Box Model of IT projects, the theoretical framework which was utilised to guide the data collection process, and also to take into account any additional factors and/or measures that were not initially accounted for in the constructed model.

4.1 Case Study Background

Entity A is a holding company for one of the biggest insurance corporations in South Africa. There was a merger between two organisations and after the merger, Entity A acquired another smaller company as part of its expansion in the market. These mergers and acquisitions resulted in misalignment of strategies, business processes as well as overall operations in terms of how the whole entity serviced its clients across all three different units. As part of the alignment of strategy, it was agreed by the leadership that one of the important projects to embark on was to migrate all their client data into a single repository which would allow them to service clients better, draw actionable insights from the combined data, and also cut costs of maintaining the three different systems. The first data migration was deemed as a failure by the organization which led to the group losing top clients, which resulted in dire consequences for the entity, such as losses, share price drops, staff retrenchments, and staff forced into roles which were not an ideal fit for them. This study focuses on the subsequent second data migration project, carried out after the initial project had failed.

It was agreed by the Executive Committee that the second data migration project should be embarked on to ensure that strategic alignment was realised, to eradicate all legacy systems and their associated costs, and to ensure the entity was operating on state of art systems. A project team was assembled with the involvement of senior leaders to ensure that there was a common understanding as far as the requirements were concerned and to formulate the best approach to ensure that the project was successful.

4.2 Project Views/ Perceptions

This section will outline the overall project views and/perspectives from the research participants outlined in the Sampling section above. There was consensus among most of the research participants that the data migration project was a success because data was successfully migrated from one system to the other within the specified and planned time.

> **"*…I would deem the project to have been successful. Just maybe let me qualify that, we delivered the desired project outcomes, which was in effect, to move a book business, from the source platform to the target platform ensuring that the data was firstly complete and then secondly, accurate.*" [SPM]**

> **"*…I think it was a success. And there are areas maybe we could have done better. But overall, I think it was a success, we were up and running on the new platform on the first of January, with minimal calls coming in of things not working.*" [DMTS]**

> **"*…I know and believe that the project was a success. A project that had to be done, I say that it was a success, because our main delivery, which is migrating, which is the data migration of the Client A scheme to System B.*" [PA]**

However, some participants felt that the project was not a complete success as there were still open items that still needed to be sorted out almost a year later from when the migration occurred.

> **"*…I won't say it was a failure… I would say it's a partial success because currently we do have the 2019 claims for Client A on System B but some issues still need to be resolved, but they are busy with it.*" [CTS]**

> **"*…from a technical point of view, I think it was a success. From a process or can I say, a business point of view, I think we had some learnings in there.*" [SAM]**

> **"*It was a partial success in that one for my aspects, one medicine component it was 100%. Disease risk management was 100%. However, there were other aspects of the overall project that we not done in time, and then there were issues or, how can I say issues or parts that were not considered.*" [TLMRM]**

The outstanding items created frustrations as far as they impacted departments in the operations space such as the call centre and membership which had to deal with daily complaints from members as well as the health care practitioners.

> **"*…We did the sort of closing off, we had our session, we spoke about these things and the problems that we picked up... And again, we were told that you know, we've got the support, and they will help us to get the things sorted out... and since the migration, those items are still outstanding even now.*" [TLC]**

Some participants seemed to only base their perceived success of the project in comparison to the prior Project X which was deemed as a failure by the organisation due to the poor manner in which it was executed.

> **"*…We also did a whole Project X and there were a whole lot of things that didn't work, and so with Client A data migration, we had designated people […] it was discussed and they've mapped it and made the notes […] we are going to go back and fixing it and it all worked well.*" [TLCC]**

4.3 Success Criteria

This section will set out the research findings as far as success criteria measures are concerned. It will discuss the project triangle, customer requirements, non-functional requirements, organisational requirements, other stakeholders' requirements, as well as any other requirements which emanated from the data analysis.

4.3.1 Project Triangle

There was agreement among most of the research participants that project management was well attended to as far as the traditional project triangle was concerned viz. scope, time, as well as cost. Further, there was agreement among most of the participants that

costs were one of the areas that the project had overruns on, which was as a result of scope creep as some of the issues experienced were not necessarily accounted for from the onset. It was agreed by the various signatories which were part of the project that cost overruns were not more than 10% over the initial budget. The scope was well ring-fenced and managed to ensure the delivery of the project was met as it was a non-negotiable set date, and some of the outstanding items were then pushed over to the following year.

> **"*So the timing was quite limited… the priority stuff was done… then with all of that comes the increasing costs […] So your cost has gone up, and timelines have gone up.*" [TLDRM]**

> **"*We just came in on time and certain things we had to juggle around because some of the deadlines pushed out due to unforeseen circumstances. But the final deadline, that timeline was made. So we had to juggle things around during the project to reach the final timeline.*" [DMTS]**

> **"*We were very specific with the scope, we ring-fenced very early on in the project […] We didn't have any manual workarounds, and the system was up and running. The timing was in non-negotiable deadline […] we needed to go into a contribution year on one January […] Cost is the area that we ran over but not tremendously.*" [PSPM]**

In some instances, some of the project team members were not well-informed about some of the project management core factors such as budgets as seemingly senior personnel within the project team such as SPM and PSPM were only privileged to such information.

> **"*We went live at the scheduled time. However, I cannot comment on the cost, because I was not necessarily involved in the cost of the project, as it was more executive-level decision and I do not have authority as the project administrator to operate on that level.*" [PA]**

4.3.2 Non-Functional Requirements

The section below will set out the research findings in relation to non-functional requirements, and the two main considerations namely systems integration and other non-functional requirements.

4.3.2.1 Systems Integration

The research participants were in agreement that non-functional requirements were well met, and attended to, even though there were some hiccups in the process. Further, integration of all various systems and databases which necessitate the receiving, the adjudicating, the processing, and payment of a claim had also experienced some issues as the formats of files were relatively different.

> **"*…There, we had some hiccups on setting up the infrastructure to support the new processes but your change management worked exceptionally well, then one of the biggest non-functional requirement is the actual migration of data and that went particularly well as well […] We had to do things like provider switching so on all of the integration points into the system which was initially an issue.*" [PSPM]**

This implied that some of the claims data coming through from the healthcare providers and/or billing bureaus could not be readily available in real-time, and that manual workarounds had to be done to ensure claims had fully integrated and they could be tested.

4.3.2.2 Other Non-Functional Requirements

Further, some of the research participants struggled with understanding whether there were other requirements that the project needed to deliver on other than the migration of the data, which speaks to unclear objectives. The project team argued that the way that the project was executed did not allow for consideration of other non-functional requirements. The research participants also argued that they managed to do their best in ensuring the clients were not impacted in the process.

> **"*We recorded what we did, but because of the way the platform works, in my opinion, it's a very rigid way that has been put together, so it's not really quick changes. So we did quite a big drive in getting the people involved and***

***excited […] that made a difference to the success of it […] if we could have moved the IT delivery we would relieve the pressure on our internal clients.*" [SAM]**

4.3.3 Customer Satisfaction

Some research participants felt that most of the customer requirements were well met, and the customer was well informed as far as the process to be followed was concerned. This included onboarding the customer which was Client A, and including them in the rationale to embark on this project, the impact it would have on the claims operations team, and client's revenue, as well as short-term, medium-term, and long term effects and benefits to the client.

"*…I think that was key to have as little impact on Client A members as possible because the minute you drive that up, you increase all your other customer complaints. So that's where we kept the PO involved, and where we had an issue we kept her up to date to say, look, this is what happened so she can expect complaints, but we already busy with a solution […] I think we tried to keep clients in general, just comfortable that we weren't just leaving their concerns.*" [SAM]

"*Client A was also kept in the loop every step of the way. And I think they were quite comfortable and happy when we went live and that there wasn't much noise from their members. And the sort of queries that we did get was mostly got the same as we would get every other new year […] So the queries that we got was minimal around migrating from one platform to another.*" [DMTS]

Further, some participants felt that the business had to balance its needs versus the client's needs, as far as long-term solutions were concerned. There was consensus that the project team managed to strike the 'right' balance to ensure both their needs were well catered for going forward.

"*…These are all things that need to be thought through very carefully, understanding what the business needs are and I think we got that balance right now.*" [SPM]

It was also argued that the client was in a better system in comparison to the previous system, and within few months of the data migration, there were been benefits realised as far as savings were concerned and this was demonstrated to Client A and its PO. Further, these benefits would not have been realized in the previous system as the new system has better financial controls. Some requirements were not implemented, and manual workarounds were put in place temporarily, and still needed to be resolved.

> **"*…The issue that comes about is that they're in a better space because the new system has better financial controls in place. So, that helps the client to save some money. There are currently issues because some as I said, some of the stuff that was available in the old system has not been implemented on the new system, and it's related to Project X as well […] Currently, there are some workarounds and it's manual workarounds. But what has happened now is because of these workarounds being in place, the problem is not being addressed.*" [TLMRM]**

It was stated that the data migration created some frustrations as far as the call centre department was concerned, as some benefits such as maternity benefits and day-to-day benefits did not necessarily match and get synchronized per patient. In some instances, claims would be paid from day to day whereas it should have been paid from the maternity bucket. A patient would go to the healthcare practitioner assuming day to day benefits were available, and only then learn that their benefits had been depleted. This created huge volumes of calls for the call centre and manual workarounds as alluded to above by participant SAM were put in place.

> **"*…Four or more visits later, there are no more funds in the day today. So what happens when she has the baby, that baby gets added on to the medical aid that baby needs medical care, there are no funds for her to take the baby to the doctor […] because also we had a platform change, and we also had a big benefits change.*" [TLCC]**

4.3.4 Other Stakeholders' Requirements

The section below will outline the research findings pertaining to other stakeholders' requirements. The following sections will emerge as laid out below 1) External

Stakeholders – Client A Members; 2) Internal Stakeholders – CIO and Operations; and 3) Internal Stakeholders – CEO.

4.3.4.1 External Stakeholders - Client A Members

Several stakeholders had vested interests in the execution of the data migration project. Stakeholders such as Client A members and healthcare providers were not necessarily aware that that there would be the migration because they interacted with System A (source system), which meant that it would have very little impact if at all. However, those that were impacted by the data migration were informed, and taken on an onboarding process, and were provided with the relevant training and guidance as to where they could find information on the new system since there were changes in their membership details.

> **"*…So it was interesting because there were 972 members that we needed to change member numbers for because they were duplicated on the new system. So we had to handle it with very specific requirements, we had to phone them individually, we had to send their cards and their packs.*" [PSPM]**

4.3.4.2 Internal Stakeholders – CIO and Operations

Further, other stakeholders such as several operations departments within Entity A were aware of the data migration who required that it be done as seamlessly and smoothly as possible to ensure there was very little impact on departments such as the call centre, membership, and IT.

> **"*What they told us is they said whatever you do please do not create a mess, and do not affect any of our members. It must be completely seamless. And one of the things we still talk about today was the fact that except for that communication going out to [Client A], we had little impact.*" [SPM]**

Other relevant stakeholders included the CIO of Entity A, who wanted to avoid the cost of maintaining multiple systems and realise significant savings for the business.

Healthcare providers were another stakeholder group who were contacting the call centre departments regularly expressing their frustrations with the new system as some of their claims were being not being paid even though the member had benefits. That

necessitated manual processing and payment of such claims which was counter-productive and meant additional staff members had to be hired to deal with the demand.

> **"*The doctors are calling us, and they are saying now the last claim didn't not pay, so are there benefits, then we physically, and we manually go in and we add it up, and also that's a risk […] this is my perspective, I think everybody including the CEOs, and other departments they're thinking that everything went well […] that is the part they see, the migration part went well.*" [TLCC]**

4.3.4.3 Internal Stakeholders – CEO

Many people in Entity A including the CEO were satisfied with the data migration, despite the outstanding issues. The CEO, as with the CIO, wanted to avoid the cost of maintaining multiple systems and realise significant savings for the business.

4.3.5 Organisational Benefits

Most research participants agreed that one of the main measures of the data migration project success would be its impact on the organisation's 'triple bottom line'. The triple bottom line refers to the consideration that organisations give to the three dimensions of (1) societal responsibility when embarking on projects, (2) economic factors (profitability), and (3) environmental factors (Slaper & Hall, 2011).

> ***"Entity B knows why they chose System B. They know the benefits that it realises. So it will save a lot of costs."* [CTS]**

> ***"Organizational-wise, we could start offering them our other products like Product A, Product B, and all those things […] and definitely gain more clients. Tie them in so it makes it more difficult for the main person to leave."* [TLMRM]**

> **"*…We are trying to get everybody on one platform that will be cutting costs. It's one platform to maintain, streamlining the business.*" [DMTS]**

As alluded to above the research participants mainly pointed to cost-saving as the main success criteria as far as organisational benefits were concerned. this, in turn,

would mean that the organisation will be more profitable in the future as it would have one system to maintain with all the data migrated in a single repository.

4.3.6 Other Success Criteria Measures

The section below sets out other success criteria measures that emerged in the thematic analysis. The following sections will be outlined viz. 1) Learning, change, and growth; 2) Data quality.

4.3.6.1 Learning, Change, and Growth

Some research participants were in consensus that other significant success criteria elements were not necessarily explicitly considered which included the learning, change, development, and growth of the organization to greater heights.

> **"*…We had the learning and the outcomes of the project […] What is important is that you must have your corrective measures just next to you so that you can be able to know who to go to. So, for us, it was very easy because we had the subject matter expert.*" [PA]**

4.3.6.2 Data Quality

Further, this also included quality assurance as far as the validity, correctness, and completeness of the data, which might not have been well attended to from the onset.

> **"*What happened then was because stuff was just pushed into priority stuff, not good QA was done because in IT projects you have to see as the project is going along, you do your QA, and sort out the problem and carry on. So now with that not being done, it's incurred more cost. And it's pushed the project timeline further, because you still have to go correct to all the mistakes you made when you were just pushing claims through, and then at the end of the process, you are still required to some quality assurance.*" [TLMRM]**

4.4 Critical Success Factors

This section will set out the research findings as far as critical success factors are concerned. It will outline the findings under the following sections: project management factors, team factors, senior management support, organisational factors,

risk and governance factors as well as any other critical success factors that emanated from the research findings and may have not been accounted for in the initial framework.

4.4.1 Project Management Factors

The section will outline the project management critical success factors which emerged in the research findings of this study. These factors include project coordination and monitoring, project manager, and communication plan.

4.4.1.1 Project Coordination and Monitoring

Project management success entails the coordination, the administration, the monitoring, and the control of various measures and factors that pertain to a project (Radujković & Sjekavica, 2017). It was agreed among all research participants that project management played a pivotal role in the success of the data migration project.

> **"*…Where I'm standing, project management was well organized. It was, like, sort of open and transparent from the perspective that, you know, there were timelines, everything was mapped, it was on the board there we could go into the room, and we could see, this is what is happening.*" [TLCC]**

4.4.1.2 Project Manager

The project initially experienced some hiccups with two project managers, whose style of project management which did not fit with the project team. PSPM subsequently volunteered to step in as a project manager as well as play the role of the project sponsor.

> **"*…The project started with few bumps and on shaky ground, we've been through a few project managers, until we got PSPM as the person who stepped in to be the project manager for the last bit, probably the last three months of the project.*" [DMTS]**

PA played a huge part in assisting PSPM in managing the project and ensuring that the delivery went according to the plan, and picked up any items outstanding. Further, PA was initially employed as a temporary assistant to the project, and senior management

on the project was so impressed with him to the extent that he was subsequently offered a permanent job as a project administrator on strategic projects of the organisation.

> **"*The project administrator played a very important part […] he was supposed to keep tags on all cases that were logged […] he needed to make sure that the documentation was all in place, and also the governance department.*" [CTS]**

The project was delivered within a tight deadline, and most of the important aspects of the data migration were well attended to. The scope was kept tight to ensure that by the new financial year of 1st January everything was set up to process claims on System B. It was also argued by some of the research participants that the cost overruns incurred were relatively insignificant relative to the benefits yielded by the migration.

> **"*The timing was the key critical success factor because the nature of the business implies that it had to be done at a particular date. So little, just a little bit of context, so within the Health Scheme legislation, certain activities happen at year-end where rates are reviewed and becomes effective on the first of the new year, first of January of the new year. We had to continuously assess the scope, in terms of what was non-negotiable, must have deliverables by that particular date […] The cost overruns were typically those functions that we had assumed as part of the planning would be done by the due date but had overruns so it affected predominantly, the IT-related costs […] cost overruns I suppose one could be equated to not more than 10% of the total cost.*" [SPM]**

4.4.1.3 Communication Plan

A communication plan was in place, and regular meetings were held with the relevant stakeholders to ensure that they were aware of everything that was happening on the project. The project team had a 'war' room that laid out the whole project plan and status at a certain point in time, and outstanding issues were accordingly escalated to the relevant personnel and/or departments for urgent actioning. Some stakeholders however did not quite understand their role in the project, and what was expected of them, which created more work for the project team.

"*Communication plan updated and tracked weekly. Staff was advised, daily as we had stand-ups. There was stakeholder buy-in, but they didn't understand the project or how the project works. Because like the daily stand-ups, yes, you come in there, you give your feedback, and you hear what's happening. But some of the stakeholders didn't quite understand what do we need to do.*" [TLMRM]

4.4.2 Team Factors

There was agreement that teamwork was one of the main critical success factors of the data migration project. Despite challenges with the initial project managers, the team managed to work together to deliver the project and ensure it was successful. There were several workstreams, and each workstream had a leader appointed. The leader had to regularly report back to PSPM and PA, to ensure that every task was completed in time and with efficiency. It was also pointed out that the team was very supportive of each other, and where one team member needed assistance it was dealt with accordingly like a 'well-oiled' machine. Experience and skills also helped the team in working smarter and more efficiently, and in some instances they did not require much assistance, in terms of being told what they should be doing.

"*…So we had to work extra hard. I think if we weren't so strong [a] team, we probably wouldn't have made it, but the team is quite strong and the resources in the team were quite supportive […] The teams that they employed to carry the migration are quite strong and make up the skilled staff […] and were be able to be pull from each other's and strength […] But even if you would come to sit for the day in our group, you know, you'll see we work well-oiled machine […] And that they can work on the pressure and they must make that they are well educated as well, so that they know what is expected from them.*" [CTS]

"*It was a little bit unsettling at the beginning of the project. But the guys got the swing of it, and once they saw the benefit of it, it was fine […] But we ended up working very well as a team.*" [PSPM]

It was re-iterated that one of the most important success criteria in the data migration project was ensuring attention was placed on people management, and staff morale which was argued to be at the core of the IT project success.

> ***"I think in many instances when you are dealing with a time-critical project, the thing that you've got to pay the most attention to is people and the morale. People make things happen you know and it's not technology and systems, it is allowing people to apply their expertise, and respect that."*** **[SPM]**

However, it was also pointed out that the project team relied on several key individuals to ensure the successful delivery of the project. When those individuals were off from work or on sick leave progress stalled, as they were the only subject matter experts in the areas they were involved in, which posed a risk to the delivery of the project.

> **"*The only problem that came about was that there was key personnel. If they were not there then that part of the project would fall apart. They had 2/3 individuals whom when they were not there we can't do anything. Because they were critical to implementing stuff onto the system. I think one guy was felt sick that week, so he couldn't work, so nothing could be done.*" [TLMRM]**

4.4.3 Senior Management

Senior management support was perceived by most research participants as one of the cornerstones of the project's success. Not only did senior management provide oversight to the project, but they were daily involved in ensuring that they assist the team with whatever help was needed, e.g. approval of budgets for additional resources where required, boosting the team morale, providing strategic direction to other relevant stakeholders, and escalating matters which needed to be resolved by the relevant managers within the business. The involvement of PSPM in the project manager role brought to bear important skills and years of experience which further reiterated the point that senior management was at the core of this project's success.

> **"*So we had someone like SPM, we had PSPM, they are on a much higher level than us, they made the time, they were always there. When something***

***needed to be escalated when we were getting nowhere, they would take it and say, come and let's go find out what's the problem, let's call this person, right there and then.*" [SAM]**

"*I was sitting here as the Program Manager, and any decisions required was then escalated to me on a needs basis, and I used to then engage directly with the business sponsor, executive risk managers, etc and we used to meet on a two weekly basis to inform them of progress, but we didn't have to wait for the meeting to resolve some of those issues but we use that as a mechanism to formally report.*" [SPM]

However, some research participants were of the view that while senior management might have been involved, some of them did not necessarily know and understand the real issues which the operations team experienced. Senior management relied on reports about call rates and figures which suggested that everything worked well, meanwhile the operations team was dealing with issues that remained unresolved from the data migration perspective.

"*The CEOs there at the top, they must come down and spend time on the floor with the people you know, not just listen to what the report says. The management obviously, so they're looking at the last call rate, they're looking at your turnaround times, how many losses you have occurred, and based on that it is working, they need to come down to our level to see what we are doing, to hear the things that are happening here.*" [TLCC]

4.4.4 Organisational Factors

The section below will set out the research findings in relation to organisational critical success factors. The findings will be broken up into the following sections: 1) Change management; 2) Effective communication; 3) Training and support; 4) Core project team's location; 5) Culture; 6) Resistance to change; 7) Strategy; and 8) Competitive advantage.

4.4.4.1 Change Management

Several organisational factors emanated from the research findings which influenced project success. There was agreement among most of the research participants that there

was a sound change management plan throughout the data migration project which was led by a change manager appointed from the Human Resources department. This helped the organisation with the transitions that needed to occur as a result of the execution of the project.

> **"*We had quite a nice change management plan involved in this project. So one on ones for help with the project team regularly to you feel where they are if they are doing ok, and if they need help.*" [DMTS]**

Further, it was argued that change management created a safe environment for individuals to voice out their concerns. This was well crafted to an extent that regular one-on-one discussions were held with the project team members, as well as with the areas affected by the data migration. Change management was divided into various streams which included internal stakeholders, external stakeholders, as well the project team related change management as each of their concerns and experiences were unique depending on their interaction with the new system.

> **"*...Then we also had support on the change management level side which is more dealing with individual people. So it is very important to build that relationship and not to just ignore and just get the delivery of the project. I think that is one of the things that created a good environment […] Because that also helps because there are people that are working on the call center, maybe they are not enjoying the new system.*" [PA]**

> **"*Change management stream, there was an external comms team, there's an internal comms team, there was a system migration team or stream and that's how we formulated our plan, which is a very different approach to say a critical success factor is a plan, a critical success factor is change management.*" [PSPM]**

4.4.4.2 Effective Communication

Most research participants agreed that good communication was one of the most important factors contributing to the success of the data migration project's success. This also referred to the high level of transparency among the various stakeholders in

the project. The communication plan was crafted so that all stakeholders were well-informed and taken through the project journey.

> **"*We wanted transparency. We wanted open engagement.*" [SPM]**

> **"*We had comms plans up and out. I'll probably say it comes down to training, communication, and having backup and you need it.*" [DMTS]**

4.4.4.3 Training and Support

The research participants shared different views on the adequacy of training and support to the relevant stakeholders. Some felt that the training was adequate to equip stakeholders to navigate the new system.

> **"*…So you've got also with merging multiple companies, we weren't just migrating systems, who also migrating staff into new roles, new jobs needed to do training.*" [PSPM]**

> **"*There was a lot of education and guiding them and telling them they need don't need to go there. And this is how they do it, about the way that they are supposed to submit their claims, and that speaks to [Client A] where they should have done their member education.*" [TLCC]**

Other participants felt that this was one of the factors which the organisation and/or project team fell short on, as it could have been done much earlier in the project to assist the impacted teams in coping with the new system.

> **"*…And like I said also, the first thing is that it was late because October normally you're supposed to have your benefit changes already.*" [SAM]**

4.4.4.4 Core Project Team's Location

There were a few participants that indicated working from different locations was an inhibiting factor to the project's success. In some instances, project team members battled to understand each other as far as requirements were concerned. Further, there was perceived 'red-tape' which occurred from location B where certain decisions needed to be approved by personnel based at that location. This meant that team members from location A needed to wait until such approvals were actioned, before progressing with project tasks. This also resulted in instances where project team

members resorted to making calls as a medium of communication, as emails suffered from a delayed response. Such calls proved to be ineffective as well.

> **"*It was challenging but we had to change our way of work […] That was definitely challenging and I'd say, also maybe being part of the partial success because if you have to send an email, you don't get the response immediately and it's sometimes difficult to explain what you're trying to say over the email […] And if you phone and they may be not available at that time.*" [CTS]**

> **"*…If they pick up a problem, they can physically fix it. But now it's got to be referred to Location B, as they are custodians and they're the people that hold everything there.*" [TLCC]**

4.4.4.5 Overcoming Resistance to Change

Overcoming resistance to change was identified as one of the main critical success factors. It was pointed out that some people initially had a problem with learning how to navigate the new system and picked out reasons why System A was better than System B. Both systems had their strengths and weaknesses, but System B was stricter as far as the payment of claims was concerned compared to System A.

> **"*People still had the issue, and I think they still have the issue of System B saying that it is the worse system to work on. Both systems, I would say are equal because both of them have strengths and both of them have weaknesses. And from what we found, System A used to overpay and System B is more stringent on most things.*" [TLMRM]**

> **"*…As we know that it is not easy to accept change in so attempting to change, especially when you've been working on a system for years, it is not easy to adapt to change. So, the call centre people are working on the old system. So surely they did have some difficulties.*" [PA]**

4.4.4.6 Overcoming Cultural Contradictions

There was a suggestion by some research participants that some of the resistance to change might have been as a result of the different cultural backgrounds of various teams. Certain subsidiaries and/or teams within the

same company were used to certain ways of operating, informed by their own culture before the merger and acquisition alluded to above which created further issues for the project team.

> **"*…We were the old Entity C. And then we had our own systems. And so in fact, we came into a different environment […]and I came into a world with a very different, more IT-driven whereas we decided that we drive IT. IT doesn't drive the business."* [PA]**

4.4.4.7 Organisational Strategy

The organisational strategy was perceived to be one of the most significant factors for the success of the data migration project as it ultimately guided the undertaking and execution of any project or investment the business made. Entity A wanted to (1) save costs as far as the maintenance of multiple systems, (2) deliver a more holistic service offering to customers on a platform more dynamic and cheaper to operate, and most importantly (3) to assist its customer to easily manage and interact with their policies and have more control as far as claims were concerned.

> **"*…And it's a shared platform, and by having a shared platform, we could decommission all of the old platforms. So we have a common architecture, we have a common skillset to build this capability and maintain this capability.*" [SPM]**

> **"*We needed to down or to reduce that complexity in our operating environment by only having one system, and so there was a stakeholder there. And to improve efficiencies, so he was expecting by removing the one system we'd improve efficiencies.*" [PSPM]**

4.4.4.8 Competitive Pressure

The research participants also alluded to the fact that competitive pressure, and keeping up with the latest industry trends necessitated Entity A embarking on the data migration. Further, there was agreement among most of the research participants that the failure which the organisation experienced with Project X was something they wanted to avoid as it resulted in a lowering of staff morale, retrenchment, and loss of major clients.

"…*I didn't want staff to be retrenched or dismissed as we did in Project X because we didn't try our best, that was part of the reason we pushed for it. And you know, our environment is very volatile, we might have a plan to do tomorrow, wake up they're gone.*" [SAM]

Some research participants were of the view that part of the strategy being executed was to ensure that the organisation experienced growth in the customer base and service offerings, and this was important for its future and profitability.

"*For the future of the business, because the aim is to grow and keep on improving as the business, we need to be transparent and able to allow them to share their views about the strategies that we are implementing and also how we can improve because it's not our project as the project team, it's the project for the company, for everyone that is involved.*" [PA]

4.4.5 Risk Management

Some research participants alluded to the fact that there were proper risk protocols during the project which resulted in the project getting a 'clean' audit as there were no issues that were identified during that process. Some items were flagged as high risk, and such items were closely monitored. Various meetings occurred with the custodians of those respective areas to ensure that they did not hinder the successful delivery of the project.

"*… and that's why with the audit, we had no issues.*" [SAM]

Some research participants felt that the support on risk capability was relatively limited, as in some instances the operational risk team did not attend some meetings, but generally speaking, the project team thrived by leveraging off each others' strengths which is why they were able to manage the risk themselves.

"*As far as risk, people were very thin on the ground, and we had not received as much as the base of support. So that operational risk guys often just didn't turn up to meetings, so we felt that there wasn't as much involvement as they could have been, but we are an organization that generally manages our risks, so the risk was managed well.*" [PSPM]

In some instances, the project team was not sure about the level of involvement of the risk team as they would be present and active participants on certain days but not others, which created some inconsistencies in the way of work.

> **"*…There I'm still not a hundred percent sure of what, what is happening because one day, it's good, the other day is bad. So you're getting this more like a 50-50 thing.*" [TLCC]**

4.4.6 Governance

There was unison among most research participants that governance was one of the most critical success factors, Poor governance can potentially result in a project failure when governance issues have not been addressed, mitigated, and/or even managed properly. Further, project governance was well attended to as there was an experienced team dedicated specifically to addressing those success factors. Further, there were several governance standards which the project team needed to adhere to as far as the use and transmission of the client's data, which included the Council to Medical Schemes Act.

> **"*…Governance, so they must make sure that we are aligned, we're working according to the mandate and the CMS standards, so that we don't get anything wrong because sometimes everything gets so rushed we can deviate from what was the purpose […] So the governance came in to make sure that the certain reports that will be sitting in place to prevent that so they would run the reports and they would know these benefit didn't work during the testing.* " [CTS]**

Some research participants also pointed out that proper governance controls were in place during the project which also necessitated segregation of duties.

> **"*So he was very clear on who will sign off when anything goes into production, how the document would be stored.*" [SAM]**

4.4.7 Business Process Management

Most research participants agree that it was inevitable that business processes would certainly be impacted by the data migration project, and hence it was of utmost

importance that the resultant impact was well managed from the onset. Further, some items were still outstanding which impacted the delivery and the operationalisation of the new system. Some departments were still working on three different platforms depending on the period of claims data and related details, creating frustrations among staff members.

> **"*…With regards to the disruptions, it's the stuff that is outstanding like some of the authorisation matters, and some of the letters of communication that were previously available on the old system have not been transferred yet into the new system. And then there's an inconsistency I should say on the flow itself where one individual might be able to take a call from System B, by clicking the fetch call button, and the person sitting next to them can't do that.*" [TLMRM]**

However, it was also reiterated that the support and training offered to some of the project teams did help in managing the change in business processes, and how certain tasks were executed after the migration.

> **"*…Certain business processes had to change because things were done differently on the new platform. Again, the users with sort of trained and explained how to do it on the new platform. And having sort of coaches on the floor, and assisted for the first month or so to get them used to the new way of doing things.*" [DMTS]**

There were concerns raised over the fact that System B was web-based which created challenges for the teams which needed information from the system readily available to execute some of its duties, such as the call centre. This was identified as one of the disadvantages of migrating data over to System B. Further, this created issues where the system would return incorrect information upon restart, and the operations team would rely on that information to provide feedback to third parties. Middle management would then be advised to issue out warnings to any staff member disseminating incorrect information to clients and/or any other stakeholders. Meanwhile, the core reason for having incorrect information was not being addressed.

> **"*System B is a web-based, and needs internet, and if it's down, it's down, there's nothing you can do about it, and you can't do it manually. It becomes difficult and then that is where the losses occurred where people confirm incorrect benefits and other information […] and senior management insist that you must give them warnings.*" [TLCC]**

4.4.8 Other Success Factors

The section below will discuss other success factors that emanated from the thematic analysis conducted that may have not been accounted for in the initial theoretical framework constructed in section 2.4 above.

4.4.8.1 Project Visibility

The main critical success factor identified by most research participants was project visibility as it created a platform for transparency for all the stakeholders who had vested interests in the project, and this included the whole organisation. The 'war room' also created a space for the project team to also be able to track all action items and status thereof with ease and convenience.

> ***"The fact that we knew we had the support, and when we had the visibility in the beginning, everybody saw that, so that was key ultimately."* [SAM]**

> ***"We started getting up the war room, we had like a project plan on the board. Which said by this date we got to do this, and by that date, we got to do that, so it was visible, you didn't have to go into a document on a computer somewhere"* [DMTS]**

4.4.8.2 Business Agility

The adoption of the agile methodology was identified as one of the important factors to account for the project's success, as it allowed the team to be able to create the visibility alluded to above.

> ***"One of the very important aspects is visibility […] and that is the reason why we conducted the project in an agile methodology because agile brings more visibility and it reduces the paperwork. So it brings visibility, that's***

why we also created a war room so that people can come in and see the project visibility." **[PA]**

4.5 Mechanisms

Mechanisms are defined as the link between success criteria measures and critical success factors and essentially play a central role in the realisation of IT project success (Pankratz & Basten, 2018; Pimchangthong & Boonjing, 2017). Mechanisms also play a causal role where certain success factors can be seen as 'necessary' for IT project success, and those critical success factors are elevated to mechanisms symbolising their importance and/or their causal effect (Pankratz & Basten, 2018; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). Appendix K, section 5 contains the procedure used for the identification of mechanisms. The section below will set out the mechanisms which were identified by the research participants as having played a major role in the data migration project success.

Teamwork was one of the mechanisms pointed out by most research participants as having played a centric role in the success of the project.

"*…Always go back to the well-oiled machine.*" [CTS]

"*Better teamwork and they included all the stakeholders.*" [TLMRM]

"*It was the team's willingness and eagerness to make it a success. So I think it's team morale, that always creates success, it's team morale and culture.*" [PSPM]

Further, **project visibility** was also pointed out to be a key mechanism that played a pivotal role in the success of the project. There were mixed feelings as far as the role played by senior management, as some research participants, but not all, viewed it as one of the main mechanisms which resulted in the data migration project's success.

"*I think it was visibility and transparency, and teamwork.*" [SPM]

***"…Teamwork and senior management support.*" [DMTS]**

Effective communication emerged as one of the main mechanisms which contributed to the success of the data migration project success. The high level of transparency

within the organisation, its stakeholders, and within the project team and other employees also reiterated the fact that effective communication was a key mechanism.

> **"*We wanted transparency. We wanted open engagement.*" [SPM]**

> **"*We had comms plans up and out. I'll probably say it comes down to training, communication, and having backup and you need it.*" [DMTS]**

The **project-related motivation** was identified in literature to be the main mechanism that was at the core of any IT project (Pankratz & Basten, 2018). A few participants were aligned with findings from literature as far as the role played by project-related motivation in necessitating project success. Further, it should also be noted that the difference in terminology seemed to have been the distinguishing factor from those who did not explicitly agree with project-related motivation as one of the core success factors. Ultimately as far as meaning is concerned it can be argued that different kinds of motivation might have fuelled the project team, as well as the organisation at large to succeed in the execution of this project. These included monetary motivations, and motivation not to fail as the organisation arguably did in Project X.

> **"*It depends because when you're doing a critical project, and you are aware of the things that can happen, if the project goes wrong, that itself is also a motivation that gives you a reason why you should be able to solve that issue […] So there's also monetary motivation that has been given but as far as I am in this position, I'm not aware of that. Yes, certainly, the motivation to succeed in the project as a team was the main driving force behind the project to succeed.* " [PA]**

> **"*I think it was more, you know, what, we don't want the same thing that happened during Project X again.*" [TLMRM]**

4.6 Summary

It is evident from the data analysis and findings that several factors necessitate IT project success. Most research participants agreed with the initial model constructed based on the findings of the literature review of IT projects. There was consensus among the research participants that the project was, in fact, a success, and there were

varying views and/or perceptions as far as the level of success, with most participants referring to it as a partial success. Further, most research participants expressed their views and/or perceptions of the project in comparison to Project X that Entity A embarked on, which was deemed as a failure as it led to the organisation losing clients, which resulted in low staff morale, and retrenchments.

There were various success criteria measures and critical success factors where the views and/perceptions of the research participants deviated from the initial theoretical framework constructed from literature. The data analysis and findings revealed that there were other success criteria measures and critical success factors which emerged throughout the process and were not necessarily part of the model which was initially constructed (shown in yellow constructs in Figure 3 below). This is one of the advantages of using thematic analysis as it allows a researcher to explore and consider other factors other than those identified in literature (Braun & Clarke, 2006).

The main themes were consolidated into a new theoretical model as depicted in Figure 3 below. Interaction between these mechanisms and/or among some of the mechanisms does not suggest that the absence of one or more mechanisms leads to a breakdown in the value chain and thus failure will be imminent. In some cases one or two interactions can lead to the success of an IS/IT project. It depends on the type of projects, its complexity, and expected timelines for its delivery, and various other factors already discussed above. Mechanisms play a causal role where certain critical success factors can be seen as 'necessary' for IT project success, and those critical success factors are elevated to the green triangle of Figure 3 below symbolising their importance and/or causal effect. The direction of the arrow represents the positive impact of one factor to the other, leading to the mechanisms as well as depicting the relationships between mechanisms and the success criteria measures thus leading to IT project success (Pankratz & Basten, 2018). It should also be noted that the arrows showed do not necessarily exclude any possible relationships which may exist among the critical success factors and/success criteria, however, to simplify the model the focus was specifically drawn to the main relationships which emerged from the research findings (Pankratz & Basten, 2018).

Project-related motivation was identified as the main mechanism in our initial model by several sources of literature (Pankratz & Basten, 2018; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017; Taherdoost & Keshavarzsaleh, 2016). However, the research findings revealed that few participants perceived project-related motivation as one of the most important mechanisms, and thus it was dropped in the final presented model in figure 3 below as it did not emerge to be the centric 'force' which necessitated the IT project success. Nevertheless, project-related motivation was noted to be the most important mechanism in general IT projects, and as also argued above that data migration projects are unique/complex types of IT projects hence the lack of emergence as a centric force (Pankratz & Basten, 2018; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017; Taherdoost & Keshavarzsaleh, 2016).

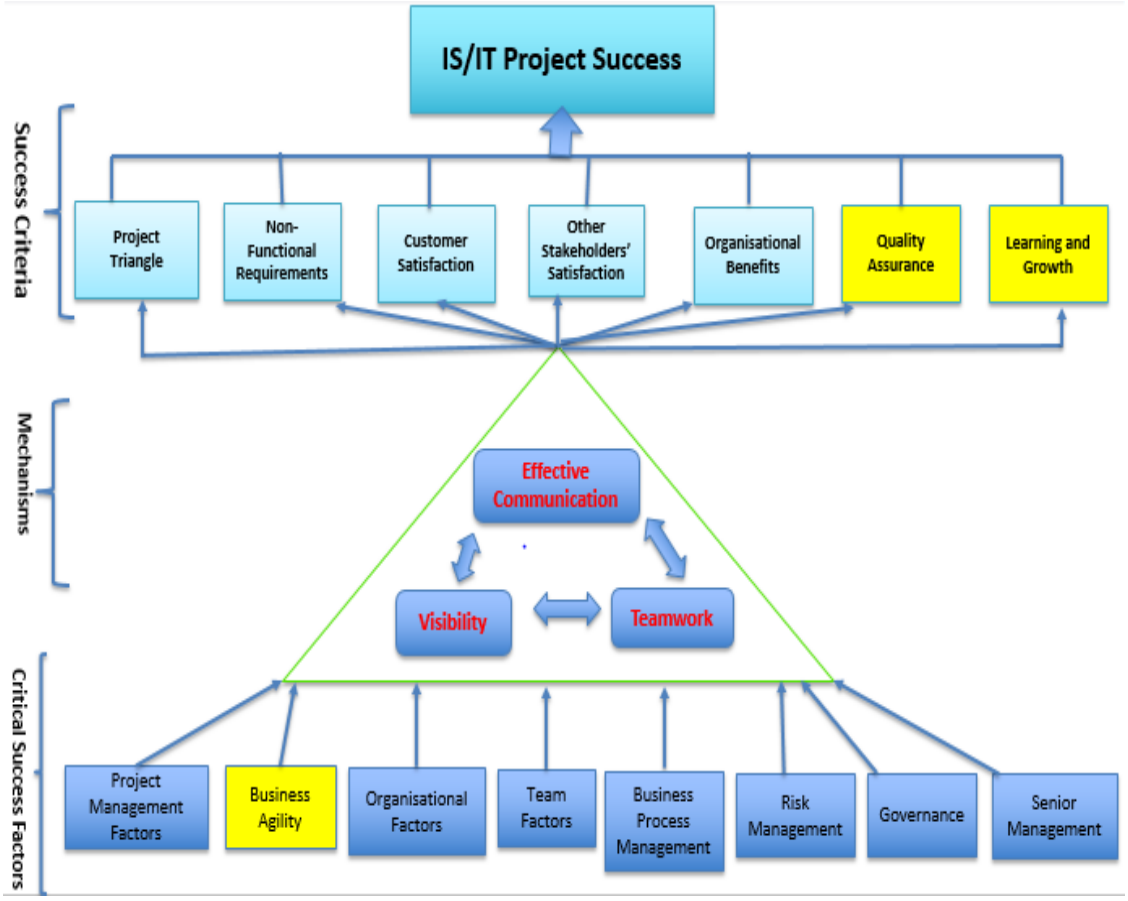


Figure 3: Modified Black Box of IS Project Success Mechanisms based on research findings.

Chapter 5: Discussion of Research Findings

The section below will discuss the implications of the research findings in relation to the literature review, and the earlier constructed model which was utilised as a guide for the data collection and analysis. The discussion will be broken up into the main themes in the same format as the findings section above viz. success criteria section, critical success factors, and mechanisms. This section will also consider additional sections that may have emanated from the thematic analysis conducted.

5.1 Success Criteria Measures

The success criteria measures will be layed out under several sections viz. project management, non-functional requirements, customer satisfaction, other stakeholders' requirements, organisational benefits, and any other additional measures which emanated from the data analysis.

5.1.1 Project Triangle

IT project success is typically measured in terms of the IS project triangle viz. sticking with the agreed budget, completing the project within the specified timeframe, and ensuring that the functionality and specifications which have been set upfront are all satisfied (Davis, 2017; Pankratz & Basten, 2018). In this case, there is coherence between the stance taken by literature and the research findings in the sense that the traditional project triangle emerged as one of the main success criteria measures from the thematic analysis conducted.

The project triangle realisation can be necessitated by one or more of the identified mechanisms viz. effective communication, teamwork, and project visibility as these mechanisms effectively drive the timely delivery of a project, ensuring that costs and scope are also adhered to, not compromising the quality in the process.

5.1.2 Non-functional Requirements

Most research participants pointed out that initially the focus was to ensure that the functional aspects of the system were attended to, and everything was working as initially intended. Further, integration between various systems that were already communicating with System A proved to be quite a challenge. Some billing bureaus

and healthcare providers could not submit their claims electronically, resulting in several manual workarounds. These necessitated the hiring of additional resources to deal with the backlogs and also improve the turnaround times to resolve matters and respond to the relevant stakeholders.

According to Sebestyen (2017), success criteria should also consider the inclusion of factors connected to the sustainability of the project in instances where the end product is operational or commercially viable. The commercial and/or operational viability of a project has some impact on the success of the whole project (Sebestyen, 2017). This factor is generally overlooked as most projects are usually regarded as successful upon completion, and continuity is thus taken for granted (Pankratz & Basten, 2018; Sebestyen, 2017). There were considerable non-functional requirements which the project had to deliver on, and the research participants agreed with literature as far as their importance in measuring the success of an IT project as discussed above.

Teamwork, project visibility, and effective communication allow for non-functional requirements to be addressed to the satisfaction of the relevant stakeholders. The link between project visibility and non-functional requirements is relatively strong as visibility ensures transparency.

5.1.3 Customer Satisfaction

There were varying views about customer satisfaction as an IT project success criteria. Most participants were in agreement that customer requirements were well attended to, and they were on-boarded accordingly and kept abreast of all the relevant information with regards to the project. Further, some customers were already realising the benefit of the data migration as System B yielded significant savings to Client A within a few months after going live. There was consensus among most participants that the customer was also informed about the reasons the organisation decided to embark on this project, which is aligned to its strategy of consolidating its businesses and establishing and revamping its business processes.

Some of the participants who worked in the operations environments such as call centres felt that some customers were frustrated, and in some instances took out their frustrations on the staff members attending to their telephonic queries. Further, in some

instances, the system paid benefits from incorrect benefit categories resulting in frustrations for the operations departments as the staff members had to manually recalculate the paid figures and reprocess the claims which created a huge business risk. As alluded to above, literature pointed out the importance of client satisfaction and centricity for any organisation which implements any IT project (Mazur et al., 2014; Sebestyen, 2017). Research participants were in agreement with literature on the significance of customer satisfaction.

The realisation of customer satisfaction relies on effective communication, project visibility as well as teamwork, as alluded to above by various sources of literature. Customer satisfaction is one of the main success criteria measures that determine the success of IT projects, and hence the strong links with mechanisms as alluded to above.

5.1.4 Other Stakeholders' Requirements

Some stakeholders were not necessarily included in the process of onboarding the in the project, especially those that had very limited interaction with the target system. The resultant impact was that some billing bureaus and/or healthcare providers were unable to timeously submit their claims, which necessitated manual processing of claims. The stakeholders which were deemed to experience a direct impact as a result of the execution of the project were on-boarded and their requirements were well attended to from the onset even though there were glitches experienced from time to time. There were workarounds in place to cater for such cases.

One of the most important aspects of project success is to ensure that it is defined separately by the respective stakeholders in project life cycles viz. different incremental phases and this analysis/assessment can then inform of the overall impact on the project as a whole (Mazur et al., 2014; Sebestyen, 2017). There was consensus among most research participants and literature as far as the inclusion and the tracking of the success criteria measured against the incremental deliverables of an IT project. For the most part, these were accounted for until the end of the project cycle.

Similar to customer satisfaction to discussed in section 5.1.3 above, other stakeholders' requirements also relied on the combination of one or more of the mechanisms alluded to above.

5.1.5 Organisational Benefits

Several organisational benefits flowed from the execution of this IT project (data migration). As discussed above in section 2.2.5, these benefits included strategy alignment to ensure the realisation of the triple bottom line viz. profitability, people management, and caring for the environment (Brown, Dillard, & Marshall, 2006; Slaper & Hall, 2011). Further, business continuity and future realisation of benefits, as well as the human capital aspect were also key considerations in the success of this IT project. Most research participants agreed that one of the major reasons that the project has deemed a success was the strong focus on human capital and the professional growth of people involved in the project where they felt empowered to make certain business decisions and drove most of the processes without senior management supervision.

Literature is coherent as far as organisational benefits as a measure of IT project success is concerned. The views and perceptions expressed by the research participants alluded to the fact that organisational benefits had to be well-defined, tracked to ensure they are realised. For the realisation to occur, a proper needs analysis was conducted and also agreed to by the CIO.

The thematic analysis revealed that several other success criteria measures might have not necessarily have been accounted for from the initial model utilised to guide the data collection process. These included learning, change, and the future growth of the organisation.

There is evidence in literature that organisational benefits can be impacted by the three mechanisms alluded to above viz. project visibility, effective communication as well as teamwork.

5.1.6 Other Success Criteria Measures

Other success criteria measures that emerged in the thematic analysis conducted include data quality as discussed in section 4.3.6 above. The emergence of these success criteria measures represents an opportunity for future research.

5.2 Critical Success Factors

The critical success factors will be set out under several sections viz. project management factors, team factors, senior management support, organisational factors, and any other additional critical success factors which emanated from the data analysis.

5.2.1 Project Management Factors

It has been argued that good project management generally leads to the success of an IT project (De Bakker et al., 2010; Yang et al., 2011). There is consensus between the research findings and literature as far as the importance and the role of good project management to yield IT project success. Most research participants felt that the project management was well catered for, except for the very limited scope of quality assurance. The participants also felt that the role of the project manager was central to the success of the project, The project manager played a pivotal role by coordinating various project activities and ensuring that the execution occurred seamlessly while keeping the respective stakeholders informed of the project progress.

There was a strong relationship between the mechanisms identified in this study as well as project management factors such as the existence of a competent project manager as it results in effective communication, project visibility, and teamwork, and this view is in line with the findings in literature.

5.2.2 Team Factors

Team composition in terms of skills, experience, and seniority is argued to affect the success of an IT project (Davis, 2014; Serrador & Turner, 2015). Research participants were of the view that the project contained the 'right' level of experience, technical skills, and seniority. There were admittedly instances where the project team felt like they had too many tasks to complete before the cut off of 31st December as they were stretched and had very limited assistance from other relevant departments such as IT, which then meant they had to work overtime. The consideration for cultural norms and tolerance thereof also created an environment that was guided by mutual respect among team members (Davis, 2014; Serrador & Turner, 2015). Team building excursions, reward, and recognition also played a significant role in motivating the team members

to give their best effort, and these views are consistent with literature's stance as far as this matter is concerned.

Team factors are the umbrella term for several factors including teamwork. Team factors result in good teamwork, and this is the main link to the three mechanisms identified in this study.

5.2.3 Senior Management

Senior management support and involvement were perceived to be one of the most important factors contributing to IT project success. Senior management is responsible for ensuring that the delivery of the project is unhindered, that there is sufficient budget, that resources are managed well, and that any matters which arise during the project have been escalated as far as risks are concerned (Davis, 2014; Mir & Pinnington, 2014; Nixon et al., 2012; Pankratz & Basten, 2018). The research findings indicate that there was some consensus between some sources of literature and the research conducted as far as the significance of the role of senior management support in the successful delivery of an IT project. Some participants argued that senior management was involved in this project to such an extent that they knew the granular details concerning the project which made it easier for the project team to execute on their mandate. However, Ngwenyama and Norbjerg (2010) found that IT project success can be realised with relatively weak senior management support and/or involvement. This assertion is consistent with the views from some of the research participants regarding their perceived impact of senior management support in the project and the fact that the project team solved some of the problems encountered using their connections and networks of people they were acquainted with within the organisation.

Senior management can play pivotal a role in enabling effective communication, project visibility, and teamwork, as top management can drive the successful execution of any project as they make decisions on budgets, incentives, as well boost team morale in general.

5.2.4 Organisational Factors

Effective communication is one of the most significant critical success factors as it is a means of providing constant feedback, and requests for input from the various

stakeholders involved in an IT project who will ultimately rate its success or failure (Papke-Shields et al., 2010). Consequently, a good communication plan has to be drawn up and incorporated into a project management plan (Maqbool et al., 2017; Papke-Shields et al., 2010). Communication also necessitates the achievement of some of the other critical success factors such as clarity, and transparency (Maqbool et al., 2017; Papke-Shields et al., 2010). The level of communication can also be seen by the level at which team members and/or other stakeholders exchange thoughts, ideas, opinions with others to ensure smooth completion of the project mission (Maqbool et al., 2017; Yang et al., 2011). It is further argued that effective communication is necessitated by good leadership, which helps achieve high performance, and boosts team morale (Khatavakhotan & Ow, 2012; Maqbool et al., 2017; Yang et al., 2011).

One of the most important critical success factors which is often overlooked is organisational culture (Radujković & Sjekavica, 2017). Project managers and/or other stakeholders have to be mindful of existing cultural practices that have been entrenched in organisations and ensure that the planning and execution of the project do not necessarily hinder such norms (Davis, 2017; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). Further, project managers need to ensure that they communicate to the relevant stakeholders any impact which culture or religious practices may have on project delivery and obtain buy-in from the project sponsor, senior management, and other relevant stakeholders to avoid any conflicts (Davis, 2017; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). The research findings also confirm the fact that organisational factors can be one of the main determinants of whether or not an IT project is delivered per expectations. The interactions which occur at various levels in the organisation ultimately guide how issues are resolved. Organisational culture and work ethic also guide how best certain tasks are executed. The strategy and vision of the organisation will also provide strategic direction on how similar projects are managed.

There are strong links between organisational factors such as strategy, culture and effective communication, and teamwork. These strong links were also alluded to as set out above in the literature review section.

5.2.5 Risk Management

Risk management generally consists of four phases viz. risk identification, risk assessment, risk planning, as well as risk monitoring (Sebestyen, 2017). The magnitude of a risk management plan is directly related to the size of the IT project embarked and/or the size of the organisation (Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017). Literature is also in agreement with the research findings that risk management is one of the integral factors to consider to ensure that team members can execute their mandate effectively.

Project visibility has a strong link to risk management, as this ensures that all risks are made clear and visible, and constantly tracked and managed, otherwise IT project success can be hindered. This is in congruence with findings in literature as discussed in section 2.3.5 above.

5.2.6 Governance

The lack of or inadequate organisational/IT governance can contribute to project success or failure, and thus organisations need to have strong policy frameworks, which are implemented as part of their strategy and thus constantly monitored (Mir & Pinnington, 2014). Governance also involves the process of investigating or establishing business processes to ensure coherence and collaboration between teams/departments which are affected when embarking on an IT project (Alias et al., 2014; Pimchangthong & Boonjing, 2017; Radujković & Sjekavica, 2017).

Similarly, governance can be necessitated by project visibility and teamwork, as these mechanisms ultimately ensure that governance is executed effectively, and thus tracked to ensure smooth delivery of the project.

5.2.7 Business Process Management

Business process management is an important factor to consider. Either a redesign of the processes which exist is inevitable, or scrapping of old and redundant processes is necessary to ensure that the implementation of a new system is in coherence with the organisational strategy. There is consensus between the research findings that business process management can result in effective communication, project visibility, and

teamwork, as alluded to in section 2.2.7 above as well in the findings section 4.4.7 above. Business process management also results in smooth business processes, the executing of tasks, and the proper segregation of duties and controls in an organisation. Thus it is recognised as one of the most important success factors.

5.2.8 Other Critical Success Factors

There are other critical success factors that emerged in the thematic analysis conducted such as business processes that were impacted by the execution of this project and resulted in workaround systems that created more manual work for the operations departments. This posed a huge risk as far as the system override for payment systems. More resources had to be hired to deal with increased complaints from clients, and consequently, the budget was increased to deal with the added pressure.

5.3 Mechanisms

The research findings revealed several mechanisms that were central to the perceived success of the IT project and these included effective communication, project visibility, and teamwork (Pankratz & Basten, 2018; Papke-Shields et al., 2010). The identification of these three mechanisms was discussed above in section 4.5 and appendix K below. These mechanisms were unanimously mentioned to be the main cornerstones leading up to the success of the IT project. Mechanisms play a pivotal role as the link between success criteria and success factors as discussed above in section 4.5. This is an important role which in turn contributes to the success of any IT project. Mechanisms play a causal role whereby certain success factors are elevated symbolising the importance and/or their causal effect link with success criteria and thus IT project success. The importance of mechanisms has been ventilated in the findings of this study in the same manner which was identified in literature in section 2.3 above. This means that there is coherence between literature and the research findings as far as the role mechanisms play.

As stated above in section 4.6, the research findings revealed that few participants perceived project-related motivation as being one of the most important mechanisms, and thus it was dropped in the final presented model in figure 3 above. However, in some instances, some participants would use different terminology, while in essence

alluding to project-related motivation, which represents an opportunity for investigation in future research.

5.4 Summary

The section below will set out the summary of this study, the expected contribution, as well as future research and limitations which can be conducted around IT project success specifically looking at data migration projects. The initial model discussed in section 2.4 above outlined several success criteria measures and several critical factors, and project-related motivation as the main mechanism as derived from literature. As stated above in the findings (chapter 5), there are several additional success criteria which emerged in the thematic analysis conducted, and these included quality assurance, and learning and growth. Further, additional critical success factors also emerged from the research findings of this study, and these included business process management and business agility. Project-related motivation was removed as a mechanism in Figure 3 shown above, as three new mechanisms emerged in the research findings as discussed in the mechanisms section above.

Chapter 6: Conclusion

The primary purpose of this study was to determine the reasons why IT projects succeed, and evaluate the level of success in light of the traditional project triangle viz. cost, scope, and time. Further, a constructed Black Box of IS project model as proposed by various sources of literature was utilised which was based on the premise that there are three main themes which guide project success viz. success criteria, critical success factors as well as mechanisms (Mazur et al., 2014; McLeod et al., 2012; Mir & Pinnington, 2014; Nixon et al., 2012; Pankratz & Basten, 2018; Radujković & Sjekavica, 2017; Sebestyen, 2017; Serrador & Turner, 2015; Taherdoost & Keshavarzsaleh, 2016).

Various success criteria were predefined before the empirical undertaking was embarked on. These success criteria included the project management triangle viz. cost, scope and time, non-functional requirements, customer satisfaction, other stakeholders' requirements, as well as organizational benefits. The research findings indeed confirm these success criteria.

Various critical success factors were identified in literature that guided the data collection of this study. These factors included good project management, team-related factors, senior management support, organizational factors, as well as business process management, risk management, and governance. The was coherence between various sources of literature and the views and perceptions of the participants as far as the role played by these main factors on the success of the project.

Several mechanisms were identified to have played a pivotal part in the project success viz. project visibility, teamwork, and effective communication. These mechanisms necessitate that communication as well as other various factors and success criteria ensure that the project functions as a unit to necessitate project success.

There were various other factors and measures which emerged during the data analysis which were not part of the initial model that was constructed from various sources of literature, and these included project visibility, quality assurance, learning and growth, business agility as discussed in the findings section above.

6.1 Expected Contributions

Data migration projects are a relatively rare and unique type of IT project. The organization where the case study was conducted has been going through various migration projects.

6.2 Future Research and Limitations

A limited timeframe constrained the exploration of various other avenues within the IT project's success subject matter. There are currently limited resources on data migration projects which could be utilised by organisations while embarking on similar projects, and as such one could look at the reasons why data migration projects do not seem to attract much research attention. Data is one of the biggest assets an organisation has, and when utilised to its full potential competitive advantage could emerge. Challenges were identified as being from the impact of mergers and/or acquisitions on IT projects. To what extent success can be attributed to one factor as opposed to another, and the impact of subjectivity on perceptions of IT project success are also matters for future research.

The reconstructed, and revised theoretical model could be further investigated and analysed, particularly concerning the emergent sub-themes which were contained in the model, and whether or not these can constitute main themes on their own or whether they fall into the categories they have been placed under. There are other notable factors and measures which did not emerge during the thematic analysis, and various reasons could be attributed to this, which could include the possibility that a participant(s) did not necessarily understand the context of the question, or they did not deem such factors as having a played a role in the partial success of the data migration project, or due to the nature of the migration being studied in the case.

The study also presents an opportunity for future research to be conducted using a more in-depth and investigative methodology such as critical realism which would outline the various events, the structures, the mechanisms, and the causal effects on IT project success, and thus offer more comprehensive findings relative to the findings of this study. Future research can also investigate the causal links between success factors, success criteria, and mechanisms by investigating how those interactions can lead to IT

project success. There are relatively limited sources of literature as far as the role of mechanisms is concerned and this has been identified as an opportunity for further studies to be conducted as literature generally discusses the critical success factors as well as success criteria. Further, this study also suggests opportunities for further research in the IS/IT domain where there are not many data migration best practices, as well as much research conducted on mechanisms that connect critical success factors with success criteria.

References

Alias, Z., Zawawi, E., Yusof, K., & Aris, N. (2014). Determining critical success factors of project management practice: A conceptual framework. *Procedia-Social and Behavioral Sciences, 153*, 61-69.

Badrinarayanan, N., Krishnan, S., & Andireddi, K. (2017). Maintaining data integrity during data migration. *U.S. Patent No. 10,496,291*. Washington, DC: U.S. Patent and Trademark Office. In: Google Patents.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101.

Brown, D., Dillard, J. F., & Marshall, S. (2006). Triple bottom line: a business metaphor for a social construct.

Chung, L., & do Prado Leite, J. C. S. (2009). On non-functional requirements in software engineering. In *Conceptual Modeling: Foundations and applications* (pp. 363-379): Springer.

Davis, K. (2014). Different stakeholder groups and their perceptions of project success. *International Journal of Project Management, 32*(2), 189-201.

Davis, K. (2017). An empirical investigation into different stakeholder groups perception of project success. *International Journal of Project Management, 35*(4), 604-617.

De Bakker, K., Boonstra, A., & Wortmann, H. (2010). Does risk management contribute to IT project success? A meta-analysis of empirical evidence. *International Journal of Project Management, 28*(5), 493-503.

Geeling, S., Brown, I., & Weimann, P. (2017). Processes of Relating: Cultural Implications in Information Systems Development.

Geeling, S., Brown, I., & Weimann, P. (2019). Performing IS Development: Culture's Emergent Influence. *Association for Information Systems*.

Idu, A. (2012). Data Migration for Data Intensive Software Products. *Magistrsko delo, Utrecht University, Nizozemska*.

Ika, L. A. (2009). Project success as a topic in project management journals. *Project Management Journal, 40*(4), 6-19.

Joslin, R., & Müller, R. (2015). Relationships between a project management methodology and project success in different project governance contexts. *International Journal of Project Management, 33*(6), 1377-1392.

Khatavakhotan, A. S., & Ow, S. H. (2012). Improving IT Risk Management Process by an Embedded Dynamic Verifier Core: Towards Reducing IT Projects Failure. *Paper presented at the Intelligent Systems, Modelling and Simulation (ISMS), 2012 Third International Conference on Intelligent Systems Modelling and Simulation* (pp. 684-687). IEEE.

Lam, S. K., Sleep, S., Hennig-Thurau, T., Sridhar, S., & Saboo, A. R. (2017). Leveraging frontline employees' small data and firm-level big data in frontline management: An absorptive capacity perspective. *Journal of Service Research, 20*(1), 12-28.

Langer, N., Slaughter, S. A., & Mukhopadhyay, T. (2014). Project managers' practical intelligence and project performance in software offshore outsourcing: A field study. *Information Systems Research, 25*(2), 364-384.

Liu, S., Zhang, J., Keil, M., & Chen, T. (2010). Comparing senior executive and project manager perceptions of IT project risk: a Chinese Delphi study. *Information systems journal, 20*(4), 319-355.

Makad, R. (2017). Data Migration [White Paper]. Retrieved from https://www.bcone.com/data-migration-successful-data-migrations-a-viewpoint/

Malach-Pines, A., Dvir, D., & Sadeh, A. (2009). Project manager-project (PM-P) fit and project success. *International Journal of Operations & Production Management, 29*(3), 268-291.

Maqbool, R., Sudong, Y., Manzoor, N., & Rashid, Y. (2017). The Impact of Emotional Intelligence, Project Managers' Competencies, and Transformational Leadership on Project Success: An Empirical Perspective. *Project Management Journal, 48*(3), 58-75.

Maruping, L. M., Zhang, X., & Venkatesh, V. (2009). Role of collective ownership and coding standards in coordinating expertise in software project teams. *European Journal of Information Systems, 18*(4), 355-371.

Mazur, A., Pisarski, A., Chang, A., & Ashkanasy, N. M. (2014). Rating defence major project success: The role of personal attributes and stakeholder relationships. *International Journal of Project Management, 32*(6), 944-957.

McLeod, L., Doolin, B., & MacDonell, S. G. (2012). A perspective-based understanding of project success. *Project Management Journal*, *43*(5), 68-86.

Mir, F. A., & Pinnington, A. H. (2014). Exploring the value of project management: linking project management performance and project success. *International Journal of Project Management, 32*(2), 202-217.

Moeini, M., & Rivard, S. (2018). Responding—or not—to information technology project risks: an integrative model. *MIS quarterly*.

Mpazanje, F., Sewchurran, K., & Brown, I. J. T. E. J. o. I. S. i. D. C. (2013). Rethinking Information Systems Projects Using Actor-Network Theory: A Case of Malawi. *58*(1), 1-32.

Ngwenyama, O., & Nørbjerg, J. (2010). Software process improvement with weak management support: an analysis of the dynamics of intra-organizational alliances in IS change initiatives. *European Journal of Information Systems, 19*(3), 303-319.

Nixon, P., Harrington, M., & Parker, D. (2012). Leadership performance is significant to project success or failure: a critical analysis. *International Journal of productivity and performance management, 61*(2), 204-216.

Oracle. (2011). Successful Data Migration [White Paper]. Retrieved from https://www.oracle.com/technetwork/middleware/oedq/successful-data-migration-wp-1555708.pdf

Pankratz, O., & Basten, D. (2018). Opening the black box: Managers' perceptions of IS project success mechanisms. *Information & Management, 55*(3), 381-395.

Papke-Shields, K. E., Beise, C., & Quan, J. (2010). Do project managers practice what they preach, and does it matter to project success? *International Journal of Project Management, 28*(7), 650-662.

Pavlovski, C. J., & Zou, J. (2008). *Non-Functional Requirements in Business Process Modeling.* Paper presented at the APCCM.

Pimchangthong, D., & Boonjing, V. (2017). Effects of risk management practice on the success of IT project. *Procedia Engineering, 182*, 579-586.

Plümper, T., Troeger, V. E., & Neumayer, E. J. A. a. S. (2010). Case selection and causal inference in qualitative research. *Unpublished working paper, University of Essex, Essex, 24.*

Radujković, M., & Sjekavica, M. (2017). Project management success factors. *Procedia Engineering, 196*, 607-615.

Rai, A., Maruping, L. M., & Venkatesh, V. (2009). Offshore information systems project success: the role of social embeddedness and cultural characteristics. *MIS quarterly*, 617-641.

Robinson, O. C. (2014). Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative research in psychology, 11*(1), 25-41.

Schierholz, R., & Al-Mudimigh, A. S. J. B. P. M. J. (2007). The role and impact of business process management in enterprise systems implementation.

Sebestyen, Z. (2017). Further considerations in project success. *Procedia Engineering, 196*, 571-577.

Serrador, P., & Pinto, J. K. (2015). Does Agile work?—A quantitative analysis of agile project success. *International Journal of Project Management, 33*(5), 1040-1051.

Serrador, P., & Turner, R. (2015). The relationship between project success and project efficiency. *Project Management Journal, 46*(1), 30-39.

Singh, R., Keil, M., & Kasi, V. (2009). Identifying and overcoming the challenges of implementing a project management office. *European Journal of Information Systems, 18*(5), 409-427.

Slaper, T. F., & Hall, T. J. (2011). The triple bottom line: What is it and how does it work. *Indiana business review, 86*(1), 4-8.

Stoica, R., & Brouse, P. (2013). IT project failure: A proposed four-phased adaptive multi-method approach. *Procedia Computer Science, 16*, 728-736.

Taherdoost, H., & Keshavarzsaleh, A. (2016). Critical Factors that Lead to Projects' Success/Failure in Global Marketplace. *Procedia Technology, 22*, 1066-1075.

Thalheim, B., & Wang, Q. (2013). Data migration: A theoretical perspective. *Data & Knowledge Engineering, 87*, 260-278.

Thomas, D. R. (2006). A general inductive approach for analyzing qualitative evaluation data. *American journal of evaluation, 27*(2), 237-246.

Todorović, M. L., Petrović, D. Č., Mihić, M. M., Obradović, V. L., & Bushuyev, S. D. (2015). Project success analysis framework: A knowledge-based approach in project management. *International Journal of Project Management, 33*(4), 772-783.

Vaismoradi, M., Turunen, H., & Bondas, T. (2013). Content analysis and thematic analysis: Implications for conducting a qualitative descriptive study. *Nursing & health sciences, 15*(3), 398-405.

Walsham, G. (2018). Research methodologies for information systems in the development context: a tutorial. *The Digital Challenge: Information Technology in the Development Context: Information Technology in the Development Context*, 30-37.

Welsh, E. (2002). *Dealing with data: Using NVivo in the qualitative data analysis process.* Paper presented at the Forum Qualitative Sozialforschung/Forum: Qualitative Social Research (Vol. 3, No. 2).

Yang, L.-R., Huang, C.-F., & Wu, K.-S. (2011). The association among project manager's leadership style, teamwork, and project success. *International Journal of Project Management, 29*(3), 258-267.

Žabjek, D., Kovačič, A., & Štemberger, M. I. J. B. P. M. J. (2009). The influence of business process management and some other CSFs on successful ERP implementation. *Business Process Management Journal.*

Appendices

Appendix A: Literature Review Sources

Author(s)	Key Focus	Source Published
Ika (2009)	Project success	Project Management Journal
Malach-Pines et al. (2009)	Project Manager and project success	International Journal of Operations & Production Management
Maruping et al. (2009)	Collective ownership and uniformity in project teams	European Journal of Information Systems
Rai et al. (2009)	IS project success and role of culture	MIS Quarterly
Singh et al. (2009)	Conquering project management challenges	European Journal of Information Systems
De Bakker et al. (2010)	Risk management contribution to project success	International Journal of Project Management
Liu et al. (2010)	Senior management perceptions of project risk	Information Systems Journal
Papke-Shields et al. (2010)	Project managers and project success	International Journal of Project Management
Oracle (2011)	Successful data migration	White Paper (Online)
Yang et al. (2011)	Leadership style, teamwork, and project success	International Journal of Project Management

Idu (2012)	Data migration	Magistrsko Delo, Utrecht University (University Masters Thesis)
Khatavakhotan et al. (2012)	Risk management in projects	2012 Third International Conference on Intelligent Systems Modelling and Simulation
McLeod et al. (2012)	Perspective based understanding of project success	Project Management Journal
Nixon et al. (2012)	Leadership performance to project success	International Journal of Productivity and Performance Management
Savolainen et al. (2012)	Project success from a stakeholder's perspective	International Journal of Project Management
Stoica & Brouse (2013)	Multiple-phases of project success/failure	Procedia Computer Science
Thalheim & Wang (2013)	Data migration	Data & Knowledge Engineering
Alias et al. (2014)	Critical success factors	Procedia-Social and Behavioral Sciences
Davis (2014)	Stakeholders' perspectives on project success	International Journal of Project Management
Mazur et al. (2014)	Project success and roles of stakeholder relationships	International Journal of Project Management

Mir et al. (2014)	Linking project management and project success	International Journal of Project Management
Ramos & Mota (2014)	Perception of project success	Procedia-Social and Behavioral Sciences
Berssaneti et al. (2015)	Variables' impact on project success	International Journal of Project Management
Joslin & Müller (2015)	Relationship between project management and project success	International Journal of Project Management
Serrador & Turner (2015)	Project success and project efficiency	Project Management Journal
Todorović et al. (2015)	Project success analysis	International Journal of Project Management
Taherdoost & Keshavarzsaleh (2016)	Critical success factors impact on project success	Procedia Technology
Badrinarayanan et al. (2017)	Maintaining data integrity during migration execution	Patent Application Publication (US Patent Publication)
Davis (2017)	Project success perspectives	International Journal of Project Management
Lam et al. (2017)	Frontline management on project success	Journal of Service Research
Maqbool et al. (2017)	Emotional intelligence, project manager and competencies on project success	European Journal of Information Systems

Pimchangthong & Boonjing (2017).	Risk management and governance on project success	Procedia Engineering
Radujković & Sjekavica (2017)	Project management success factors	Procedia Engineering
Sebestyen (2017)	Considerations in project success	Procedia Engineering
Moeini & Rivard (2018)	Response to project risk	MIS Quarterly
Pankratz & Basten (2018)	Managers perspective of IS project success	Information & Management
Oosterwyk et al. (2019)	Synthesis of literature review from IS journals	Proceedings of 4th International Conference on the Internet, Cyber Security and Information Systems 2019

Appendix B: Nvivo Coding – Main Themes

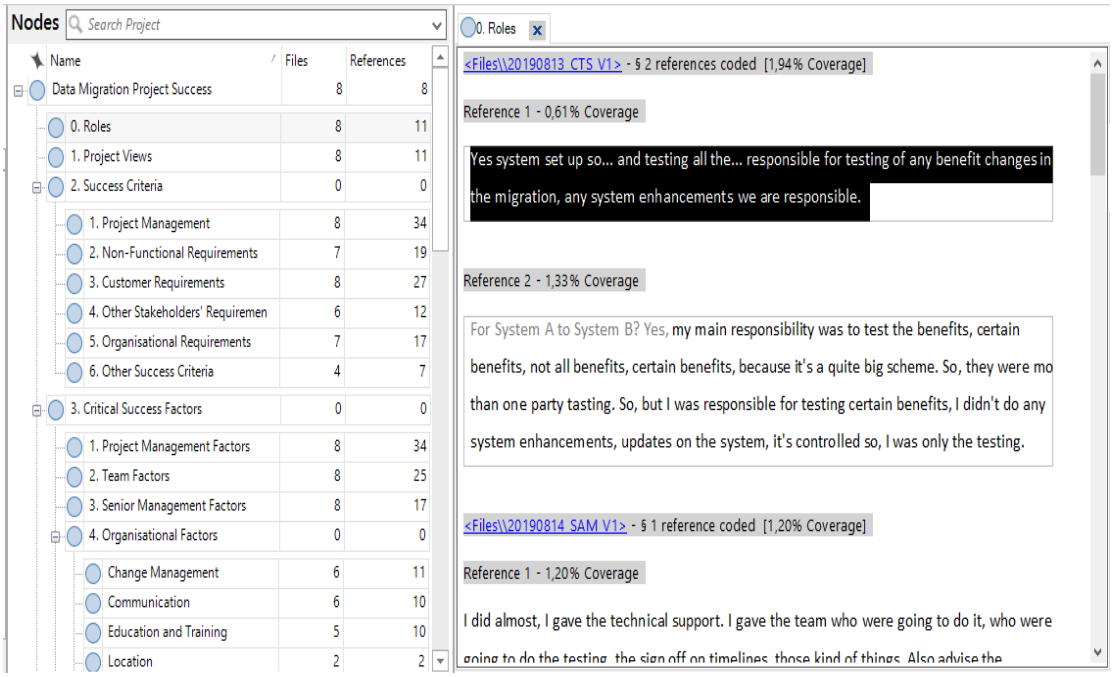
Nodes

Name	Files	References
Data Migration Project Success	8	8
0. Roles	8	11
1. Project Views	8	11
2. Success Criteria	0	0
1. Project Management	8	34
2. Non-Functional Requirements	7	19
3. Customer Requirements	8	27
4. Other Stakeholders' Requirements	6	12
5. Organisational Requirements	7	17
6. Other Success Criteria	4	7
3. Critical Success Factors	0	0
1. Project Management Factors	8	34
2. Team Factors	8	25
3. Senior Management Factors	8	17
4. Organisational Factors	0	0
5. Business Process and Governance Factors	0	0
6. Any Other CSFs	1	1
4. Mechanisms	8	11
Project-related motivation	8	12
5. Summary	8	12

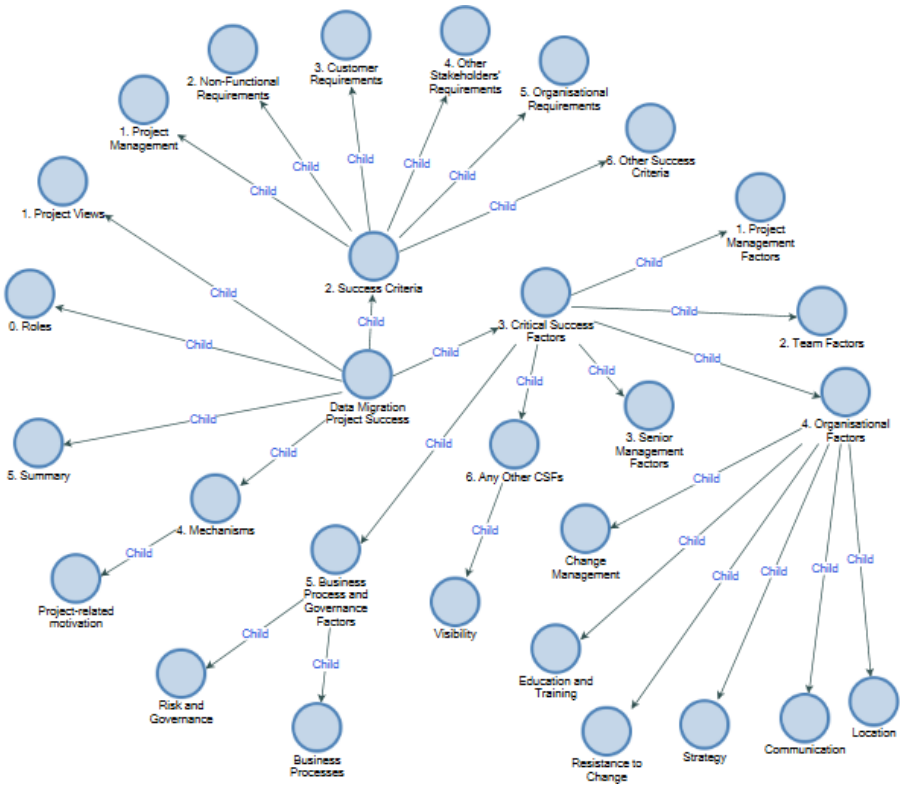
Appendix C: Nvivo Coding – Sub-themes

3. Critical Success Factors	0	0
1. Project Management Factors	8	34
2. Team Factors	8	25
3. Senior Management Factors	8	17
4. Organisational Factors	0	0
Change Management	6	11
Communication	6	10
Education and Training	5	10
Location	2	2
Resistance to Change	4	6
Strategy	7	21
5. Business Process and Governance Factors	0	0
Business Processes	7	14
Risk and Governance	8	12
6. Any Other CSFs	1	1
Visibility	4	6
4. Mechanisms	8	11
Project-related motivation	8	12

Appendix D: Nvivo Coding – Roles



Appendix E: Nvivo Coding – Project Mind Map



Appendix F: Ethics Application

Any person planning to undertake research in the Faculty of Commerce at the University of Cape Town is required to obtain ethical clearance. This form is intended for undergraduate students, honours students, PD Dip students, and Masters students whose research component is less than 90 credits.

Once this form is completed it should be sent via email to your departmental ethics representative. Your supervisor will be able to provide you with the contact details.

It is assumed that the researcher has read the UCT Code for Research involving Human Subjects (Available at http://web.uct.ac.za/depts/educate/download/uctcodeforresearchinvolvinghumansubjects.pdf) in order to be able to answer the questions in this form. Students must include a copy of the completed form with the dissertation/thesis when it is submitted for examination.

1. PROJECT DETAILS			
Project title:	**Critical Success Factors, Mechanisms, and Information Technology Project Success: A Case Study of a Data Migration Project in a large South African Organisation.**		
Principal Researcher/s:	Akhona Krakri	**Email address(es):**	Krkakh001@myuct.ac.za
Research Supervisor:	Prof. Irwin Brown	**Email address(es):**	Irwin.brown@uct.ac.za
Co-researcher(s):	N/A	**Email address(es):**	N/A
Department: Information Systems			
Brief description of the project: This study will seek to understand reasons why IT projects succeed specifically looking at data migration projects and will utilise a case study of a large South African corporate where the researcher is currently employed. The organisation had embarked on a journey to migrate data from different platforms into one platform in an attempt to service its clients better and gain better insights from the migrated data. Previous projects have been perceived as failed, and the recent one was perceived as a success, and we want to understand the reason thereof.			

Data collection: (please select)

√☐ Interviews ☐ Questionnaire ☐ Experiment ☐ Secondary data ☐ Observation

☐ Other (please specify): _____

Have you attached a research proposal OR a literature review with research methodology? (please select)

√☐Yes ☐No

2. PARTICIPANTS

2.1 Does the research discriminate against participation by individuals, or differentiate between participants, on the grounds of gender, race or ethnic group, age range, religion, income, handicap, illness or any similar classification?	YES	√NO
2.2 Does the research require the participation of socially or physically vulnerable people (children, aged, disabled, etc.) or legally restricted groups?	YES	√NO
2.3 Will you be able to secure the informed consent of all participants in the research? (In the case of children, will you be able to obtain the consent of their guardians or parents?)	√YES	NO
2.4 Will any confidential data be collected or will identifiable records of individuals be kept?	√YES	NO

2.5 In reporting on this research is there any possibility that you will not be able to keep the identities of the individuals involved anonymous?	YES	√NO
2.6 Are there any foreseeable risks of physical, psychological or social harm to participants that might occur in the course of the research?	√YES	NO
2.7 Does the research include making payments or giving gifts to any participants?	YES	√NO

If you have answered **YES to any of these questions**, please describe how you plan to address these issues (append to form):

The only foreseeable risk at this stage is the fact that the participants are/were involved in the data migration project, and should they say anything to the contrary to the views of the senior executives regarding the project, that could hinder their chances of their career progression, and or make the working environment unconducive. One of the best ways to resolve this is to anonymise all information/data gathered, and that way all information cannot be traced to a specific individual.

Affiliations of participants: (please select)

√☐Company employees ☐Hospital employees ☐General public ☐Military staff ☐ Farm workers ☐Students

☐ Other (please specify): _____

Race / Ethnicity:

Are you asking a question about race/ethnicity in your questionnaire?

☐ Yes √☐No

Which race categories have been used?

Have you included the option: "Prefer not to answer" as part of your race/ethnicity question?

3. Provision of Services

Does your research involve the participation of or provision of services to communities? No

If your answer is YES, please complete below:

3.1 Is the community expected to make decisions for, during or based on the research?	YES	NO
3.2 At the end of the research will any economic or social process be terminated or left unsupported, or equipment or facilities used in the research be recovered from the participants or community?	YES	NO
3.3 Will any service be provided at a level below the generally accepted standards?	YES	NO

If you answered YES to any of these questions, please describe below how you plan to address these issues.

3. ORGANISATIONAL PERMISSION

If your research is being conducted within a specific organisation, please state how organisational permission has been/will be obtained:

The researcher has engaged with the Project Sponsor, and the purpose of the research was explained to her, and how it could be beneficial to the organisation from a project learning perspective. The Project Sponsor was receptive to the idea and advised that she would also willingly part take in the interviews. I have also attached a Management Consent Form for her to sign, as well as the Participant Form for the other participants who will be involved in the study.

Have you attached the letter from the organisation granting permission? (please select)

☐ Yes ☐ No, but this **will be** obtained before commencing the research √☐ Not applicable

Are you making use of **UCT students** as respondents for your research? (please select ☐ Yes √ ☐ No

If yes, have you contacted Executive Director: Student Affairs for permission? (please select) ☐ Yes ☐ No

Was approval granted? (please select) ☐ Yes ☐ No ☐ Awaiting a response

Are you making use of **UCT staff** as respondents for your research? (please select) ☐

Yes √☐No

If yes, have you contacted Executive Director: Human Resources for permission? (please select)☐ Yes ☐ No

Was approval granted? (please select) ☐ Yes ☐No ☐

Awaiting a response

Contact Emails: Executive Director: Human Resources (**Miriam.Hoosain@uct.ac.za)**

Executive Director: Student Affairs (**Moonira.Khan@uct.ac.za)**

4. INFORMED CONSENT

What type of consent will be obtained from study participants?

- ☐ Oral Consent
- ☑ Written Consent
- ☐ Anonymous survey questionnaire (covering letter required , no consent forms needed)
- ☐ Other (Please Specify)

How and where will consent/permission be recorded?

Have you attached an informed consent form to your application? √☐ Yes ☐No

5. Sponsorship of Research

If your research is sponsored, is there any potential for conflicts of interest? No

If your answer is YES, please complete below

4.1 Is there any existing or potential conflict of interest between a research sponsor, academic supervisor, other researchers or participants?	YES	NO
4.2 Will information that reveals the identity of participants be supplied to a research sponsor, other than with the permission of the individuals?	YES	NO
4.3 Does the proposed research potentially conflict with the research of any other individual or group within the University?	YES	NO

If you have answered **YES** to any of these questions, please describe how you plan to address these issues (append to form)

6. RISK TO PARTICIPANTS

Does the proposed research pose any physical, psychological, social, legal, economic, or other risks to study participants you can foresee, both immediate and long range? (please select)

√☐ Yes ☐No

If yes, answer the following questions:

1. Describe in detail the nature and extent of the risk and provide the rationale for the necessity of such risks

1. The only foreseeable risk at this stage is the fact that the participants are/were involved in the data migration project, and should they say anything to the contrary to the views of the senior executives regarding the project, that could hinder their chances of their career progression, and or make the

2. One of the best ways to resolve this is to anonymise all information/data gathered, and that way all information cannot be traced to a specific individual.

3. Yes, this will be a great learning exercise for the organisation, and something of great value as the organisational culture is typically one which does not take time to reflect on past experiences which could be useful for the future. The project sponsor has expressed a great deal of interest

I certify that I have read the Commerce Faculty Ethics in Research policy √☐
(http://www.commerce.uct.ac.za/Pages/ComFac-Downloads**)**

I hereby undertake to carry out my research in such a way that

- there is no apparent legal objection to the nature or the method of research; and
- the research will not compromise staff or students or the other responsibilities of the University;
- the stated objective will be achieved, and the findings will have a high degree of validity;
- limitations and alternative interpretations will be considered;
- the findings could be subject to peer review and publicly available; and

- I will comply with the conventions of copyright and avoid any practice that would constitute plagiarism.

Signed by:

	Full name and signature	Date
Principal Researcher/Student:	Akhona Krakri 	28/06/2019

This application is approved by:

Supervisor		
Departmental Ethics Rep		

Questionnaire checklist on next page

CHECKLIST	SELECT
A full copy of a research proposal or a literature review with methodology is attached in a separate file	☐
Interview schedules / cover letters / questionnaires / forms and other materials used in the study are attached in separate files	☐
Organisational consent letter / UCT student or staff approval letter	☐

On your cover letter to your questionnaire have you included the following?	NA ☐
1. The following UCT Logo	☐
2. A sentence explaining the aim of the research	☐
3. Sentences of a similar nature to below must be included in the cover letter or consent form:	
This research has been approved by the Commerce Faculty Ethics in Research Committee.	☐
Your participation in this research is voluntary. You can choose to withdraw from the research at any time.	☐
The questionnaire will take approximately X minutes to complete	☐
You will not be requested to supply any identifiable information, ensuring anonymity of your responses.	☐
Due to the nature of the study you will need to provide the researchers with some form of identifiable information however, all responses will be confidential and used for the purposes of this research only.	☐ OR ☐
Should you have any questions regarding the research please feel free to contact the researcher (insert contact details).	☐

4. Have you scanned in your signature for the last section of the form?	☐

Appendix G: Ethics Approval

Faculty of Commerce

Private Bag X3, Rondebosch, 7701
2.26 Leslie Commerce Building, Upper Campus
Tel: +27 (0) 21 650 4375/ 5748 Fax: +27 (0) 21 650 4369
E-mail: com-faculty@uct.ac.za
Internet: www.uct.ac.za


@Commerce UCT


UCT Commerce Faculty Office

05-Aug-2019

Akhona Krakri

Department of Information Systems

University of Cape Town

REF: 2019/08/006

Critical Success Factors, Mechanisms, and Information Systems Project Success

We are pleased to inform you that your ethics application has been approved. Unless otherwise specified this ethical clearance is valid until 31-Aug-2020

Your clearance may be renewed upon application.

Please be aware that you need to notify the Ethics Committee immediately should any aspect of your study regarding the engagement with participants as approved in this application, change. This may include aspects such as changes to the research design, questionnaires, or choice of participants.

The ongoing ethical conduct throughout the duration of the study remains the responsibility of the principal investigator.

We wish you well for your research.


Jacques Rousseau
2019.08.05
15:47:15 +02'00'

Jacques Rousseau
Commerce Research Ethics Chair
University of Cape Town
Commerce Faculty Office
Room 2.26 | Leslie Commerce Building

Office Telephone: +27 (0)21 650 2695 / 4375
Office Fax: +27 (0)21 650 4369
E-mail: com-faculty@uct.ac.za
Website: https://www.commerce.uct.ac.za/Pages/Ethics-in-Research

Appendix H: Cover Letter

Department of Information Systems

Leslie Commerce Building

Engineering Mall, Upper Campus

OR

Private Bag. Rondebosch 7701

Tel: +27 (0) 21 650 4028 Fax: +27 (0) 21650 2280

Internet:

ttp://www.commerce.uct.ac.za/informationsystems/

Date (DD MMM YYYY)

Dear Sir/Madam,

In terms of the requirements for completing a Master's degree in Information Systems at the University of Cape Town a research study is required.

The researcher, in this case ***Akhona Krakri***, has chosen to conduct a study entitled **Critical Success Factors, Mechanisms, and Information Systems Project Success: A Case Study of a Data Migration Project in a large South African Organisation**. This study seeks to uncover and document perceptions about the data migration project the organisation has embarked on to consolidate all client scheme data into a single source. This research study has been approved by the Commerce Faculty Ethics in Research Committee.

Your participation in this research is voluntary. All information will be treated in a confidential manner and used exclusively for the purpose of this study. No individual names will be recorded or published. You will not be requested to supply any identifiable information, ensuring anonymity of your responses. You can choose to withdraw from the research at any time for whatever reason, in accordance with ethical research requirements.

The findings of the research will be presented in a report to the University of Cape Town. The findings may also be published in an academic journal or in a conference

paper if deemed to be of academic value. A copy of the report may be made available for all participants to examine.

Should you have any questions regarding this research, please feel free to contact me on +2761 435 0475 or email: krkakh001@myuct.ac.za.

Your participation in this study would be greatly appreciated, but is entirely voluntary.

Kind regards,

Akhona Krakri

Masters Student (UCT)

Department of Information Systems

University of Cape Town

Email: krkakh001@myuct.ac.za

Prof. Irwin Brown

Research Supervisor

Department of Information Systems

University of Cape Town

Email: irwin.brown@uct.ac.za

Appendix I: Management Consent Form

I, _____, give the researcher of this study consent to conduct their study in the following organization:

_____

I am aware that participation is voluntary and that respondents may choose to withdraw from this study at any time, should they choose to do so.

Signature _____ Date _____

Appendix J: Participant Consent Form

Participant Consent Form

I, _____, consent to participate and be interviewed for the purpose of this research study, **Critical Success Factors, Mechanisms, and Information Systems Project Success: A Case Study of a Data Migration Project in a large South African Organisation**.

I am aware that participation is voluntary and that I may choose to withdraw from this study at any time if I so wish. I understand that the data collected will be used for academic purposes only, and it will be stored in a secure location provided by the university and/or a secure international online platform which is password protected.

Signature	Date

Appendix K: Semi-structured Interviews

Section 1: Introduction

Thank you for taking part in this study. The main objectives of this study are to:

- To find out reasons why IT projects succeed (data migration);
- To assess the level of success and views in relation to the traditional criteria of assessing success (Project Management Triangle: Scope, Cost, and Time) as well as other relevant measures;
- To understand the mechanism linking success factors to performance criteria; and
- To conduct and reflect on project learnings which could be taken into account going forward.

Section 2: General Questions:

#	QUESTION
GQ01	To provide me with a bit of background about your role in the organisation, Could you please tell me about your professional background (qualification(s) and work experience and/other roles you have worked in)?
GQ02	What was your role as far as the data migration project and the typical duties performed?

Section 3: Success Criteria

#	QUESTION
SC01	What are your general perceptions about the data migration project, do you think it was a success? If so, why? • How well were Project Management requirements (Project Triangle) met? • How well were Non-Functional requirements met? • How well were Customer related requirements (functionality; benefits) met? • How well were other Stakeholders' requirements met? • What were the Organisational Benefits of the project?

SC02	Apart from the abovementioned, are there any other criteria which reflect the project's success?

Section 4: Critical Success Factors

#	QUESTION
SF01	With respect to the data migration project: • What Project Management factors were the most critical to success and why? • What Team related factors were the most critical to success and why • What Management related factors were the most critical to success and why? • What Organisational factors were the most critical to success and why? • Process and governance factors were the most critical to success and why?
SF02	Apart from the above-mentioned factors, are there any other success factors that were critical to project success?

Section 5: Mechanisms

#	QUESTION
MF01	What was fundamentally the most important factor (mechanism) linking critical success factors to successful project outcomes (i.e. the success criteria). Why is it seen as being central, and how does it act as a link? Would you say that project-related motivation acted as a link (mechanism) between the success factors and the criteria in this project? How?

Section 6: Closing

	Closing
	Thank you very much for availing yourself to participate in this discussion. The general sense I get is that in your opinion the data migration project was… and this is due to... Does that summarise it accurately? Are there any last remarks you wish to make, or anything you would like to ask me?